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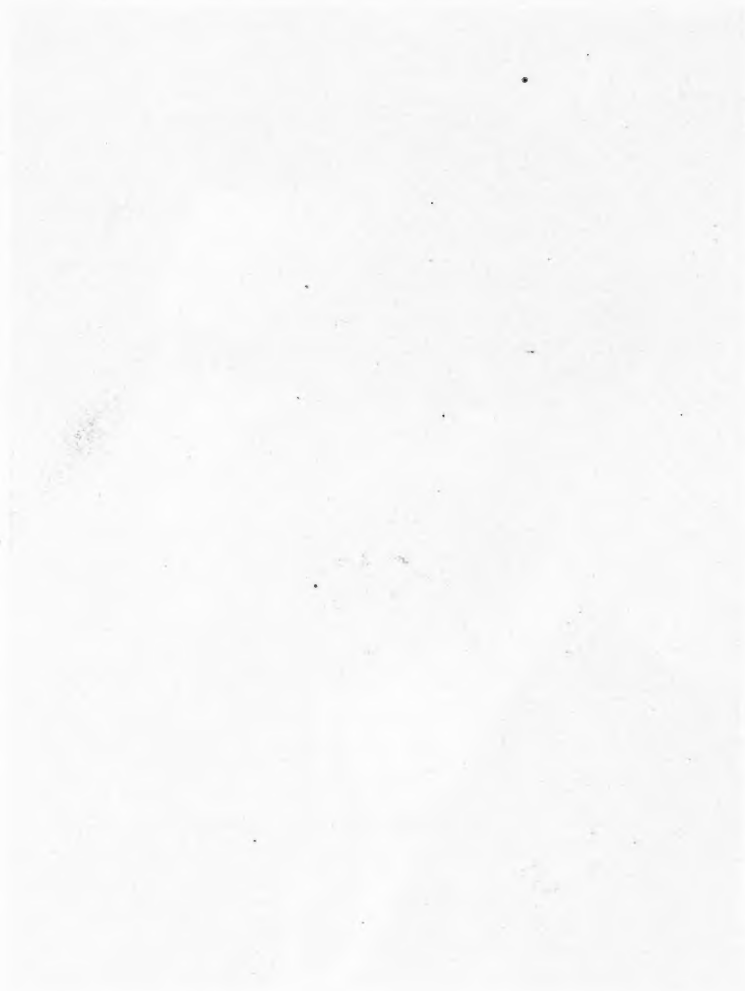
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DR. JAMES GRANT LANE.

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No. 4

ORIGINAL ARTICLES

BAND AND LINGUAL ARCH TECHNIC*

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THE first step in the technic of band making as employed by the author consists of taking a modeling compound impression of the lateral half of the arches, using a half impression tray. The object in taking only a half impression of the arch, or an impression of the molars and premolars of one side only, is to avoid the dragging of the impression as so often occurs if both sides are taken at once. In taking this impression, a half impression tray as used in ordinary crown and bridge-work can be employed, or an entire tray with modeling compound only in one side may be employed. The impression is removed from the teeth parallel with the long axes of the teeth to avoid as much distortion as possible, and to give as good an impression of the occlusal surface of the teeth and the gingival marginal ridge, including the buccal and lingual embrasures, as is possible to secure.

From such an impression a model is made as shown in Fig. 1. The band is then made over this model after the model has been prepared as is shown in Fig. 2. The preparation of the model consists in taking a fine ribbon saw and cutting through the surfaces of the teeth on the mesial and distal sides of the tooth which is to be banded. This cut with the ribbon saw is made a considerable distance below the gingival margin of the tooth as is shown in Figs. 2 and 3 in order to expose the full gingival margin of the tooth for the making of the band. The gingival margin of the tooth is curved to represent the natural curvature of the tooth in the mouth.

After the model has been prepared as shown in Figs. 1 and 2, a wire measurement is then made by taking a fine piece of wire, holding the end of it

*Principal part of an address delivered before the Alumni Society of the Dewey School of Orthodontia, Chicago, March 13, 14, 15, and 16, 1917. Written from notes made by Martin Dewey, D.D.S., while observing Dr. Mershon work in his office.

in a broach holder, and twisting it around the tooth. This wire measurement is made at the greatest circumference of the tooth, and is twisted very tight upon the plaster tooth. After twisting tight, a pull is made on the ends, and an extra twist made. The plan of making the bands from this point will be to do everything which will have a tendency to make a band slightly smaller than the natural tooth. The wire measure is then removed from the tooth intact, or can be cut on the lingual side before it is removed and straightened out as shown in Fig. 4. This wire measure is then laid upon a piece of band material the ends of which have been cut on a slant as shown in Fig. 5. The band material may be iridio-platinum, clasp metal, or Neyora elastic gold. If Neyora elastic gold or iridio-platinum is used, the band material is .005 inch thick and .18 inch wide. It will be observed in Fig. 5 that the piece of band material is slightly

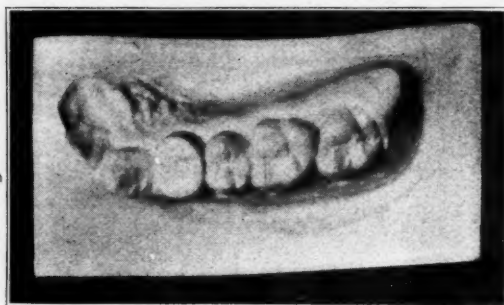


Fig. 1.

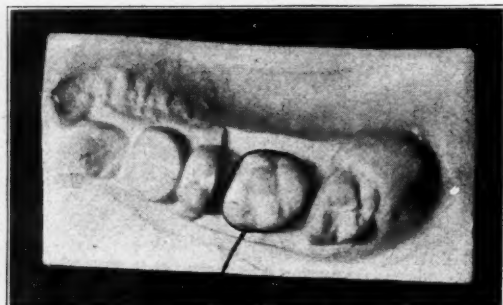


Fig. 2.

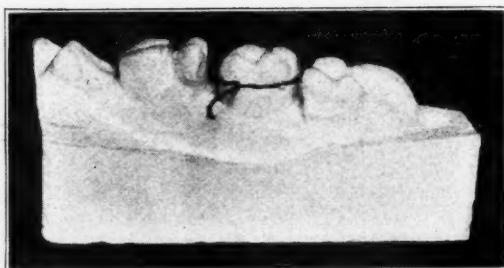


Fig. 3.

longer than the wire measure and should be made about .06 inch longer than the measure. A mark is made on the band material to represent the end of the wire measure. It will be seen from studying Fig. 5 that the long end of the beveled band material represents the measure of the tooth. In other words, when the band is soldered by overlapping the .06 inch which is longer than the wire measure, one edge of the band will be smaller than the wire measurement. Fig. 6 shows the manner in which the ends of the band are brought together and overlap. In making the solder joint, the band must be overlapped far enough to cover the mark on the band, for it must be remembered that this mark represents the end of the measuring wire; and if the mark is not covered, the band will be too large.

After the band is soldered, it will be found that it will not pass the greatest convexity of the tooth; because of the fact that the ends of the band were

cut on the bias the occlusal border is smaller than the gingival border. In fitting this band it then becomes necessary that the band be contoured and stretched in order to adapt it to the greatest circumference of the tooth, and in order to enable the band to slip gingivally past the greatest circumference. The band is placed over the tooth, and a careful note made of the portions that bind at the greatest convexity, then with stretching pliers modified by the author, as shown in Fig. 8, the band is stretched enough to allow it to slip down to the

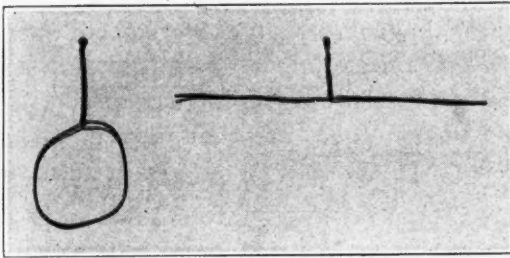


Fig. 4.

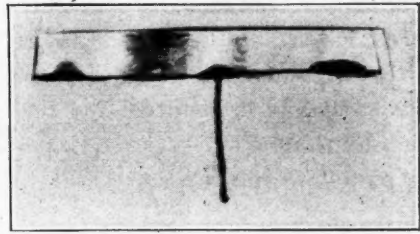


Fig. 5.



Fig. 6.



Fig. 7.

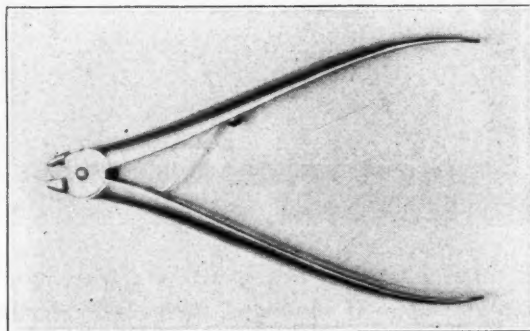


Fig. 8.

gingival portion. The mesial and distal gingival borders of the band are festooned in order to avoid infringement of the band on the gingival tissue. After the band is festooned, the smaller edge or top is carefully stretched until the band slips to the desired position on the plaster tooth. It is not expected that this band, fitted to the plaster tooth, will fit the natural tooth accurately, but it can be fitted so nearly perfect that it will require very little contouring and stretching to adapt and place it on the tooth in the mouth.

In placing these bands on the teeth, the soldered side is placed on the buccal side of the lower molar, and on the lingual side of the upper molar. The

reason for this is the buccal side of the lower molar presents a convexity at the gingival marginal ridge which is greater than that at the occlusal border. On the upper molars, the lingual side presents a greater convexity than the buccal side, therefore the lap is placed on the lingual side of the upper molar. A band that has been contoured and stretched and festooned after the manner described, if it is cut opposite the soldered seam and straightened out, will present an appearance as shown in Fig. 9.

The lower band must be stretched slightly in the lingual occlusal third. The upper molar band is soldered on the lingual side, the overlapped edge is stretched to fit the lingual convexity of the mesio-lingual cusp and the small fifth cusp which is found on the mesial side of the mesio-lingual cusp. After the band has been fitted, the buccal and lingual edges are bent toward the center of the tooth at the gingival border of the mesial and distal edge is festooned so as not to interfere with the proximal gum tissue.



Fig. 9.



Fig. 10.

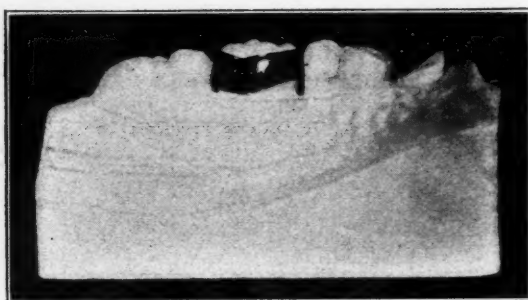


Fig. 11.

The half round tube, as shown in Fig. 10, which is about .10 inch in length, is soldered on the lingual side of the band to receive a half round spur, which is soldered to the lingual arch. The half round tube is soldered with the flat side to the band. These half round tubes may also be soldered on the buccal side of molar bands to be used to receive the attachment of the labial wire in the construction of the pin and tube appliance. The appearance of the band after the soldering of the tube on the lingual side is shown in Figs. 10, 11, and 12. Fig. 13 shows the occlusal view of the model of the lower teeth to which has been fitted two lower bands for technical demonstration which carry perpendicular half round tubes on the lingual side and which show the attached spur on the buccal side for the use of intermaxillary anchorage. After the tube has been soldered on the band, as shown in Fig. 13, the next step is the attachment of the half round spur to the premolar section of the lingual arch as

shown in Fig. 14. As has previously been stated, on the upper molars the seam of the band is made on the lingual side, which makes it necessary to have a half round tube in the proximity of the seam and in a great many instances directly over the seam. The soldering of a half round tube on the seam can be accomplished by using a lower carat solder than the one used for the seam. It must also be remembered that in making these attachments of the half round tube to the band they must be securely soldered to prevent them from being torn loose under the stress of mastication. In attaching a tube on the lingual surface of the upper molar band it must be placed as far gingivally as possible to avoid interference with occlusion when the lingual arch is in position. The tube on the lingual side of the lower molar, providing the molar teeth have the

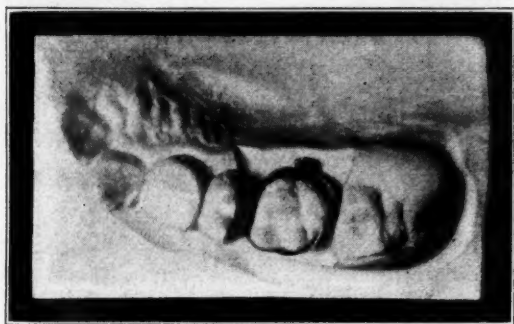


Fig. 12.

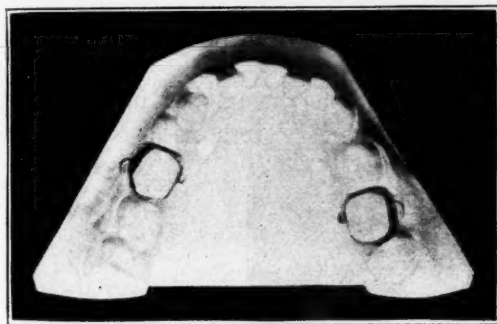


Fig. 13.

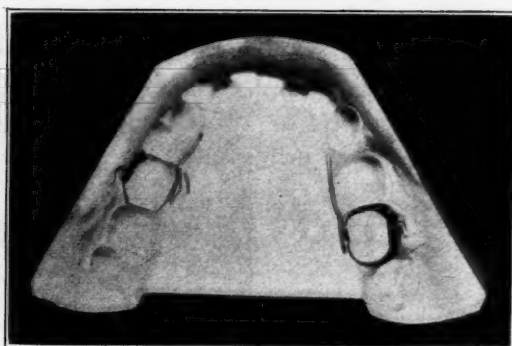


Fig. 14.

proper bucco-lingual relation with each other, can be placed nearer the occlusal border than can the tube on the upper molar, owing to the fact that there is no chance for occlusion to interfere with the tube on the lingual side of the lower molar. In using half round perpendicular tubes on the buccal side of lower molars in the construction of a pin and tube appliance, it must be remembered that the buccal tube must be placed near the gingiva, for in this case it will interfere with the occlusion of the buccal cusps of the upper molars if placed close to the occlusal border.

After the bands have been made and the tubes attached, as shown in Figs. 11 and 12, the bands are then transferred to a full model of the teeth as shown in Fig. 13. A straight piece of 19 gauge wire should be used for the construction of the premolar section of the lingual arch, to which a half round

spur is soldered about .01 inch shorter than the half round tube to allow for the lock at the gingival end of the half round tube. This 19 gauge premolar section of the lingual arch is shown in Fig. 14 and also can be seen in Fig. 17.

Fig. 14 shows how the premolar sections are adapted to the teeth; on the right molar is shown the premolar section without the lock, while on the left molar is shown the locking device for holding the lingual arch in position. This locking device is a modification of what has been known as the Young-Angle

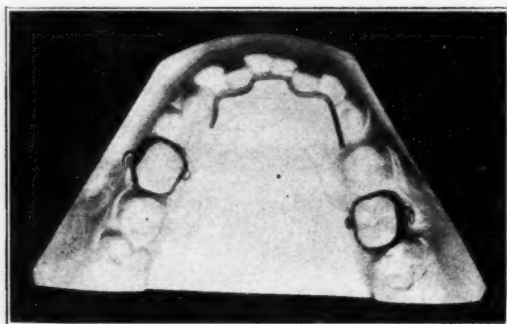


Fig. 15.

lock, and is made by soldering a piece of small gauge wire to the lingual premolar section mesial to the half round spur. This lock should be credited to Young and has been known as the Young-Angle lock. The premolar portion of the lingual arch is made to follow the irregularities of the premolars in each case as can be seen by studying Fig. 14. After the premolar portion has been fitted, the ends are cut off at a point which, as a rule, is distal to the distal surface of the canine or about the center of the first premolar.

The central or incisal portion of the lingual arch is next to be fitted. The incisal portion is also fitted to the irregularities of the teeth as is shown in

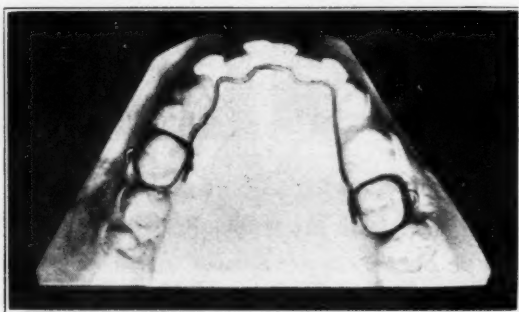


Fig. 16.

Fig. 15. It is made of such a length that the ends of the incisal section will exactly touch and fit evenly the ends of the premolar sections as is shown in Fig. 16. The incisal section is fitted to the teeth to occupy the position slightly occlusal to the gingival marginal ridge. After the incisal section has been fitted to the irregularities of the teeth as shown in Fig. 16, the ends are so shaped that they meet end to end with the premolar section, the three sections are then soldered together with the appliance in position on the model. This

insures accuracy and ease in soldering. The object of making the lingual arch in three sections is, the individual sections can be more easily fitted and the ends better adapted than when an attempt is made to fit an entire arch into all of the irregularities and bring the right and left ends to the proper molar positions and get the proper alignment of the spurs without having a spring or "kick" somewhere in the lingual arch. The various sections of the lingual arch photographed separately are shown in Fig. 17. The small piece of wire in the center is the premolar section before the half round spur has been soldered to it. Fig. 18 shows the lingual arch, one side of which shows a locking device, and on the other side the locking device has not yet been soldered in place. Fig. 19 shows the completed lingual arch soldered together in position on the molar teeth. This lingual arch is then taken off of the model and the bands and arch can be placed upon the teeth in the mouth at one sitting.

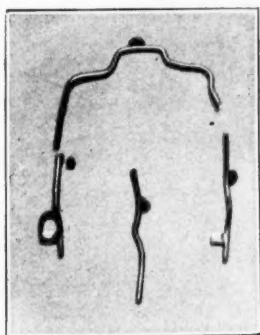


Fig. 17.

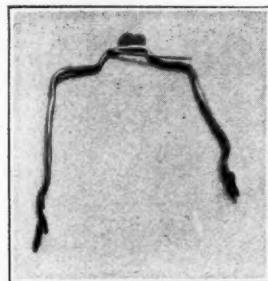


Fig. 18.

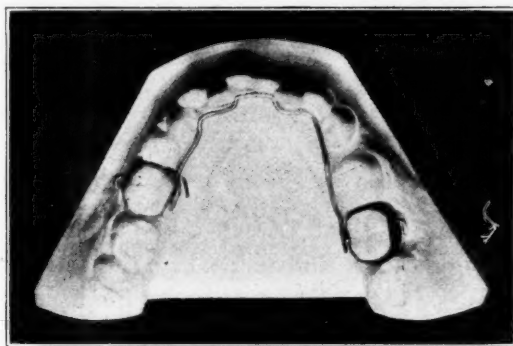


Fig. 19.

An advantage in using this appliance is that only a small amount of space is taken up, and there is not the inconvenience to the patient that is experienced when the entire appliance is put on the teeth at once. The bands are placed on the teeth and the lingual arch is in position in a passive condition and is allowed to remain in a passive condition for a few days. When it is desired to increase the active pressure on the lingual arch or to increase force on the malposed teeth, the locks are carefully removed from the gingival portion of the half round tube, so that the lingual arch can be removed from the tube on the molar band without distortion. By using a pair of Hawley measuring calipers, as shown in Fig. 20, a measurement of the distance between the half round spurs

can be obtained after the manner shown in Fig. 21. After measuring the lingual arch as shown in Fig. 21, the points of the calipers are then set in a fixed position so as to record the distance between the perpendicular tubes on the molars at the time the arch was removed from the molar.

Force is applied to the malposed teeth by taking out some of the irregularities in the lingual arch with a pair of pliers, which increases the size of the lingual arch in the incisal region and exerts pressure upon the malposed teeth. By increasing the width of the incisal section, pressure is brought to bear directly upon the premolar section in the canine region, which has the effect of widening the canines and thereby making room for the malposed teeth

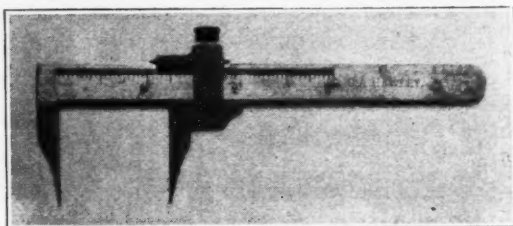


Fig. 20.

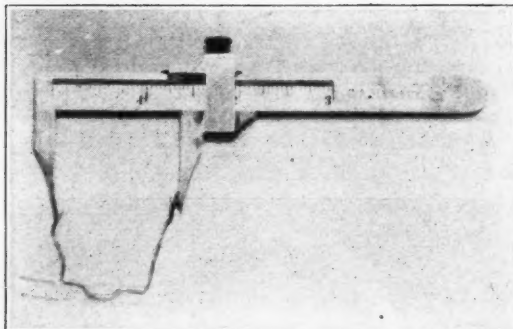


Fig. 21.

to move into their proper position. After taking out the irregularities of the incisal section of the lingual arch and increasing the space between the canines, the molar half round spurs are then checked up by the use of the Hawley measuring calipers which were set at the time the lingual arch was taken out of the molar tubes. The calipers act as a guide in determining how much expansion has been placed in the molar region or how much the perpendicular spurs have been moved either in a buccal or lingual direction. By using such measurements with the Hawley calipers or a similar pair of calipers, it is possible to place the half round spurs back in the half round tubes with the same amount of spring as was present when they were taken out if it is desired. If it is desired to place an expansive force on the molars, the exact amount of expansion which is produced can be checked up by referring to the measurement as shown by the calipers, which was obtained when the lingual arch was taken out of the tubes. If it is desired to rotate the molars, this rotation can also be accomplished by changing the position which the half round spur bears to the half round tube by bending the arch in the premolar region. With the perpendicu-

lar tube it is also possible to tip the molars in any direction desired or to produce a bodily movement. With the lingual arch the pressure exerted upon the teeth is always gentle, and owing to the fact that the arch is fitted to the lingual convexity of the incisors and placed occlusally to the gingival marginal ridge, if the pressure is too great, the 19 gauge arch will spring enough to relieve the pressure and thereby prevent the device making the teeth sore and still give the long range of elasticity which will allow the teeth to move for a considerable length of time. There is no style of appliance with which the author is familiar which has a greater range of elasticity, and at the same time a delicate pressure which is not sufficient to make the teeth sore and still produces physiological tooth movements.

Certain teeth require greater movement than others, as is shown in the left lateral incisors. After the dental arch has been expanded, a spring extension

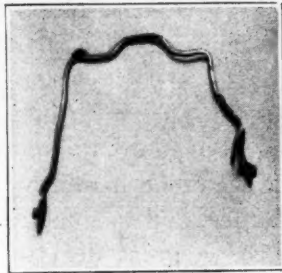


Fig. 22.

spur can be soldered to the arch as shown in Fig. 22, which will exert pressure on the lateral incisor for a considerable length of time without disturbing any of the other teeth. In the majority of cases the author places his extension spur on the gingival side of the lingual appliance. When this spur is first put on it raises the entire lingual appliance slightly occlusally, but there is an active force present which will bring the appliance back to its passive state and thereby produce movement of the teeth desired.

The modern tendency is for orthodontic patients to desire an appliance that is inconspicuous, one that does not interfere with speech, and one that can be kept clean. Of the large number of appliances that have been examined during the past few years which have been brought out in the practice of orthodontia, in the opinion of the author, the lingual arch, used under proper conditions and used with the proper understanding of mechanics, offers the most ideal appliance that has ever been devised.

FACIAL IMPRESSIONS AND CASTS

BY OREN A. OLIVER, D.D.S., COVINGTON, VA.

PART I.—THE PROFILE CAST

IN past years not enough attention has been given to the facial casts and impressions used in orthodontic cases. These plaster casts, made from plaster impressions, are about the only means by which the natural curves and facial lines can be reproduced in cases of imperfections of facial outlines or dento-facial deformations, caused by malposition of the teeth and jaws. It is almost necessary to have some way to study and compare the features during the progress of the operation, some way to follow up the different stages of the work, and to compare beginnings with results. For this purpose the facial photographs have been found very good, but do not begin to give the satisfaction that comes from facial casts, as these permit examination in detail from every angle. This article gives the general principals for making facial plaster impressions, but treats in detail of only the plaster profile cast.

These facial impressions can not be made by the first amateur that comes along, but require patience, practice, and to some extent, the skill of a mechanic. The condition of the patient has a great deal to do with the success of the operation. Especially if the subject is a child, it is necessary that the doctor gain his full confidence. No child will be willingly hurt, and until he is sure that the operation will last but a few minutes, and until he is positive that he will not be hurt, there is no use in expecting him to lie back quietly and be "plastered" without so much as changing his expression. It is better if all bystanders are sent out of the room, at least, out of the sight of the patient. These sympathizing mothers and solicitous fathers are all very well in their places, but when a child is the subject for a facial cast they are as much in the way as if the child were sitting for a photograph. If the patient once realizes that his expressions and emotions are of little or no consequence to the doctor, he is very likely to lose his selfconsciousness or fear and become perfectly at ease, and of course, the more natural the expression, the better will be the result. The patient should not be made to feel that he is about to undergo a serious operation, but let him understand that work is being done which is necessary to both him and to the doctor with no injury to either.

Now as concerns the work proper: The patient is told to relax in a comfortable position in the chair; or better still, if available, is laid on a table, in either case with his face turned from the operator. The operation is begun by taking a piece of soft lead wire, and starting at the occipital protuberance or the border of the hair, as preferred, then bringing it down in a vertical position across the forehead, nose, and chin to the neck, carefully working this wire to the curves of the profile, as shown in Fig. 1. When this is done the wire is removed without changing its form, and laid on a piece of not too brittle pasteboard. Enough pressure is put to bear on the wire that it leaves an indentation in the pasteboard like the profile of the patient. A pasteboard profile is obtained by cutting out along the indented line, fitting the cut to the face of the

model and being sure that its curves join the real ones correctly. (Fig. 2.) The reason for this is purely relative to the making of the profile cast. By using an obstruction of this kind there is little possibility of the plaster spreading beyond the median line of the face, and thus, though the construction causes

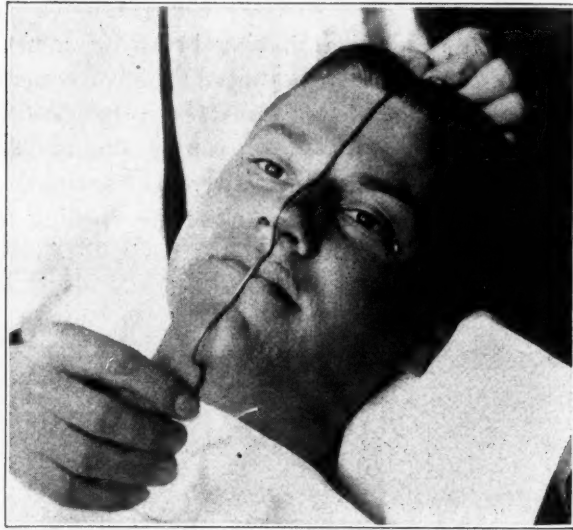


Fig. 1.

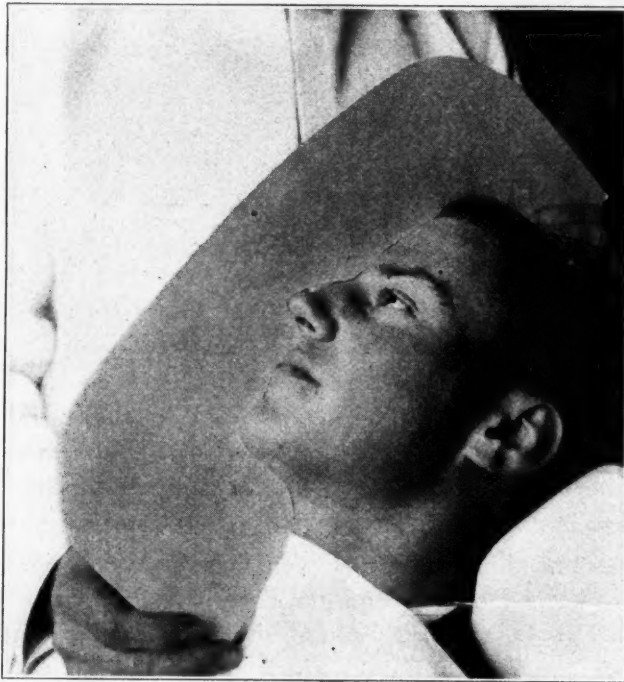


Fig. 2.

a little trouble, the pasteboard barrier facilitates the work of the operator by giving a clean cut profile, and prevents the annoyance to the patient of spreading plaster.

Next the face of the subject to the median line, or to the pasteboard obstruction is lathered with liquidized vaseline to act as a partition between the skin and the plaster and to enable an easy removal of the impression. This liquidation is accomplished by placing a thin glass jar of white vaseline in a bowl of warm water until soft enough for use. However, the vaseline must not be in a totally liquid state, but with body enough that a rapid coating may be put on the face with the aid of a shaving brush or some other large, soft brush. If the pasteboard division is not used, the vaseline is put on to the median line of the face and the doctor must be very careful not to let the plaster overstep its bounds. This vaseline painting should begin at the cheek, then extend to the mouth, lips and teeth if they are exposed. When the ear is reached a piece of cotton should be used to close the opening so that in no way will the ear drum be exposed to falling plaster, and the depressions and outer



Fig. 3.

rim should be carefully painted with vaseline. The hair around the forehead and ears may be brushed back, but the artistic effect is increased by letting it fall naturally and covering it thoroughly with the grease in a more congealed state than is used on the skin. The details, such as the eyelids to the lashes, and the skin around the nostrils, should be given special attention and thoroughly gone over with the oily substance; the skin is especially tender in these places and the impression is not so easy to remove as on a smooth surface.

When the vaseline thoroughly fills every crack and crevice of the skin, the plaster is ready to be laid on. A fine grade of plaster, but one which does not harden too quickly, is best to use; and it should be mixed with water enough to make a smooth clinging substance which can be spread with a spatula and will not run off an inclined surface. The only tools necessary for the main work are a large bowl for the mixed plaster, a wide spatula, and a brush for all tiny crevices and depressions. The pasteboard form now comes into use and requires an assistant to hold it in place in order to give a clear profile. It is of great importance that the plaster be laid on rapidly enough not to congeal

in patches, but one bit must be smoothed into the next as in painting with water colors. As with the vaseline, the plaster should be laid on the cheek first, working upward toward the eye. When the coating is put underneath the eye the patient should look upward lest his lashes pick up some of the plaster and become hard and stiff with it. The mouth seems to be the critical point, as the patient unconsciously hardens the muscles to prepare for the shock of the plaster, and as the spatula passes near the lips it is very hard for him to prevent any twitching or changing of the expression. Here, especially, is where the doctor's tact is called forth. He must not annoy or attract the patient in any way that might cause motion or a change of facial lines. If the subject is at all under control, the best the operator can do is to work as quickly and deftly

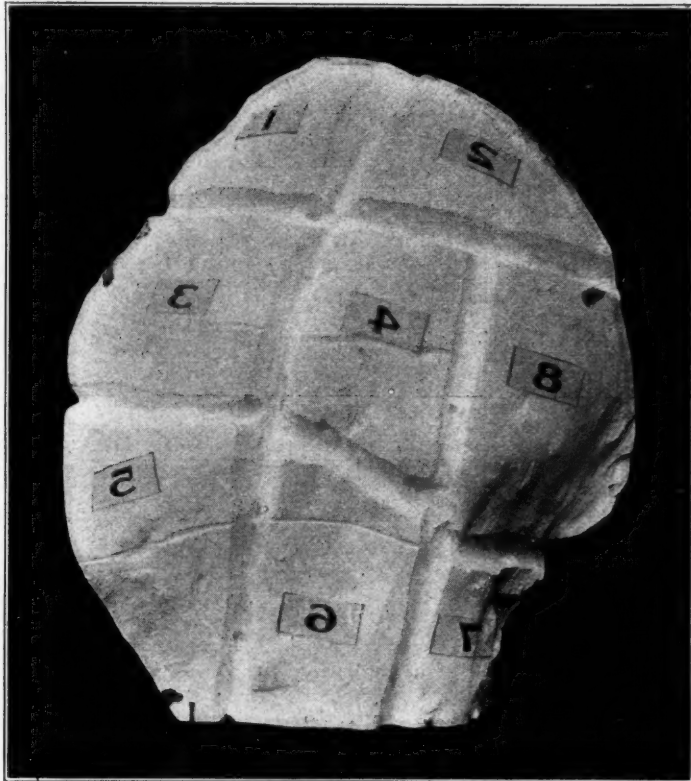


Fig. 4.

as possible with the least noise or confusion. Confusion on his part confuses the patient.

Two mixes of plaster usually suffice for a profile cast, though the work must be done rapidly lest it become too hard for handling. The thinnest coat should cover the nose while the hardest should be used for hair and eyebrows, as it is most easily removed. In the second coating, to strengthen the impression, a small amount of potassium sulphate added to the water can be used to reinforce it, as this hardens the plaster with great rapidity. (Fig. 3.) When the plaster is entirely hard, the impression should be raised gently from the face; but this should be done slowly and without exerting much force, lest the plaster crumble at the edges or some thin portion crack. The mixture may be

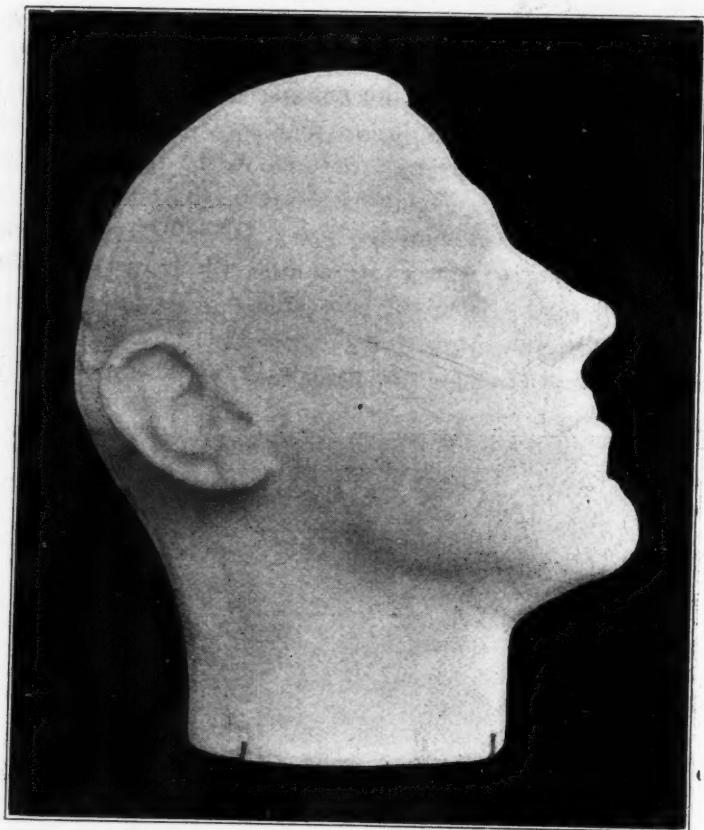


Fig. 5.

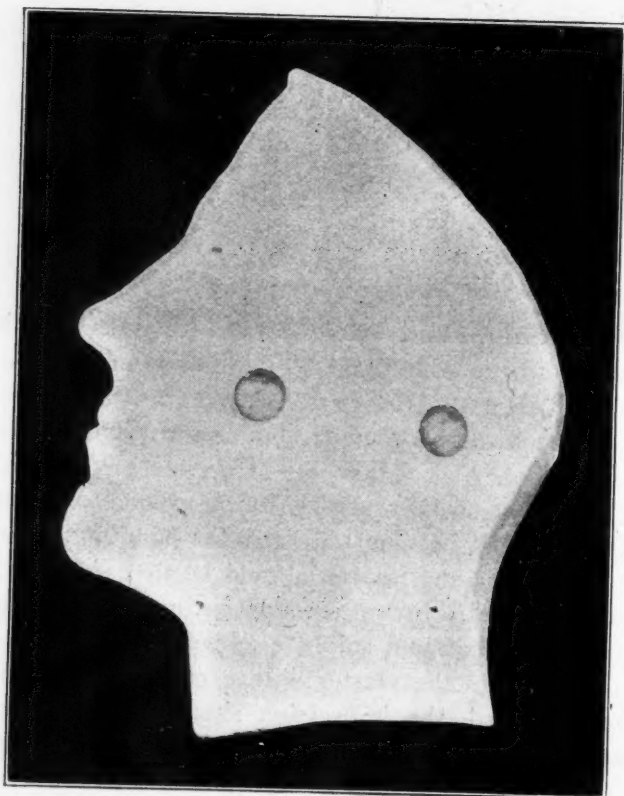


Fig. 6.

slightly adhered to the hair or eyebrows, and if the cast is removed too quickly the clinging hairs may cause the patient to move and spoil the cast. When it is being carefully removed, the finger or spatula may be inserted under the rim of the raised impression, pressed against the skin, and the hairs disengaged from the clinging substance without causing trouble either to the patient or the impression.

After the impression is taken from the face, it should be thoroughly dried before the varnish is brought into use. Shellac is employed for this purpose and a smooth coating should cover the entire impression. This must be dried; then with a camel's hair brush and some plaster and water, all the little air bubbles or other blemishes may be remedied. A second varnishing of shellac is then used to avoid the exposure of any plaster, and when this is thoroughly dry, a final painting of sandarac is applied.

When the last coating of varnish is dry, a thin plaster mixture should be poured into the impression, which is jarred slightly from side to side that the substance may work down into the crevices. A second mix of plaster is usually necessary to give the desired thickness, and this second batch is poured into the impression, smoothed down carefully and trimmed around the edges with the spatula. As it dries it may be scraped till all imperfections and rough edges are removed, giving a neat finish to the back.

The impression should then be turned to the other or front side, and with a sharp knife it should be marked into sections that facilitate the removal of the original plaster. (Fig. 4.) By cutting carefully but deeply to the division of varnish these parts may be more readily handled and more easily removed than by attempting to nick or hack off pieces haphazardly. The ear with its rims and depressions demands special attention as a little negligence may result in a chipped model. After all the sections have been removed, a plaster knife and careful trimming will bring out the profile intact and clear cut. By again using the camel's hair brush, dry plaster and a little water, all surface scars and blemishes may be made smooth. (Fig. 5.)

The cast is now completed with the exception of the corks placed in the back of the model to be used as a means of suspension by wires. (Fig. 6.) These corks may be held in place by inserting them in holes cut in the plaster, and then filling the back of the cast with plaster even to the tops of the corks; and when this is smooth and hard, the facial profile cast is completed.

(To be continued.)

ORAL PROPHYLAXIS AND ITS RELATION TO ORTHODONTIA*

BY H. C. HARTWIG, D.D.S., DETROIT, MICH.

IN speaking before a society of orthodontists, I feel much more certain of sympathy and understanding than were I giving a paper before a group of general practitioners, because you are specializing in one branch of the profession of dentistry and I in another, while a great many general practitioners, as we well know, have no patience at all with specialists. As one specialist to another, therefore, you, who believe that bringing malposed teeth into the beautiful lines of normal occlusion is the most important and wonderful branch of dental surgery, can very readily appreciate my conviction that prophylaxis is the most important and wonderful branch of dentistry.

The criticism has been made that a paper, given before a society of orthodontists, which does not deal with some phase of mechanics receives very little consideration or discussion. I am sure that criticism is unjust and untrue—I shall be doubly sure when I am finished.

Far back in my high school days, I remember we were taught something about making sure the titles of our compositions were clearly understood. Naturally, orthodontia needs no elucidation; on the third day of your meeting, you know just about all there is to be known on that subject, but I am not at all sure that many of you could tell me exactly what prophylaxis is. Just nineteen years ago, Dr. D. D. Smith, rightly called the "father of prophylaxis," first put forth his ideas of the present system of prophylaxis, and repeatedly after that, tried to make the profession see it as he saw it, with rather discouraging results. His confreres, on the whole, refused to see the truth. As *Life* says, "No wonder truth is stranger than fiction; we spend so much less time getting acquainted with it."

Before I tell you what prophylaxis is, let me say what it is not. It is not "cleaning teeth." The heavens forbid that such a term should be used in connection with oral prophylaxis! Dentists should eliminate from their own vocabularies and from those of their patients such undignified phraseology. In one of the universities the instructor of physiology, a middle-aged man of extremely caustic temperament, had as one of his classes, the junior dental students, for whom he entertained no very friendly feelings. One day after an unusually stupid quiz session, he threw down the class cards in disgust. "Brainless, absolutely brainless," he stormed, "Oh, well, what can one expect of a bunch of tooth carpenters!" The class, furious, arose, marched out and refused to return until they were given a new instructor. That is just the way I feel when anybody talks to me about "cleaning teeth."

Moving teeth is not orthodontia, though an orthodontist does move teeth. So does the extraction specialist. He moves them—and much further than an orthodontist—but is he an orthodontist? Does he restore to lines of beauty the

*Read before the 7th Annual Meeting of the Alumni Society of the Dewey School of Orthodontia, Chicago, Ill., March 13, 1917.

facial contours? Or bring back to normal a deranged nutrition? Does he put the mouth in such condition that it is self-cleansing? Or eliminate bad gums and other dental ills?

Ideal prophylaxis is entirely preventive treatment. At the present time, however, in dealing with older people, where damage has been done by ignorance or neglect in childhood, the term signifies the halting of destructive influences in the oral tissues, including the teeth, placing the mouth in a healthy condition, and what is most important, keeping it there. The oral prophylaxis specialist, therefore, is not spending his time practicing prophylaxis in its strictest sense. The larger portion of it is employed in bringing order out of chaos; in restoring to usefulness, at least partially if not completely, teeth disabled through neglect; in combating the tendencies of such tissues, once diseased, to return to a diseased condition; and in educating his patients to an understanding of the factors imperiling mouth health and of the value of sound teeth. It was not until the tuberculosis societies began propagating educational literature concerning the great white plague that much progress was made in the campaign to stamp out that disease. When people realized that it was preventable, and what simple precautions were necessary to render it preventable, they were aroused to take care of themselves and others who might prove a source of infection. Does a tuberculosis pamphlet advise people to wait until one lung is all gone and then give a list of instructions and cures? Most emphatically not. The big thing is prevention. The best way to cure tuberculosis is not to get it. So with oral diseases, especially pyorrhea, the great white plague of the mouth. People wait until their teeth are all ready to drop out before they go to a dentist and then tell him, "Why, doctor, I never had much trouble with my teeth before. I just got this pyorrhea last Christmas."

By the way, pyorrhea is not an accurate term for this disease. The scientific name is periodonticlasia. That is, it is now, until they change it again. The finest way to cure that is not to get it, and the best way to be sure not to get it is by preventive treatment instituted in childhood. People must be taught to consult their dentists more or less frequently (especially *more*) and what is extremely important, dentists must be taught that not to recognize the early symptoms of mouth diseases and to fall down on the etiology and early pathology of these diseases, is to fail in their greatest mission,—prevention. In 1913, Dr. Charles H. Mayo, speaking before the Chicago Dental Society, voiced a doubt as to their ability to succeed in that mission when he said, "It is evident that the next great step in medical progress in the line of preventive medicine should be made by the dentists. The question is, 'Will they do it?'"

Dentistry has been accused of being a repair of wasted tooth tissue for a price. We indignantly deny such an arraignment of commercialism, for we know that in no other profession do its members work harder and more conscientiously for the public good than in our own. Naturally we must live, but we do not work for a price. However, dentists are over-zealous when it comes to repair work. They are so eager to put beautiful construction work in the mouths of their patients that they lose sight of almost everything else. In a great measure that is the fault of the dental colleges. If every college had on its faculty a member who was fairly bubbling over with enthusiasm for pre-

ventive work and had a well laid out course of instruction and line of study in that work, the students could not help but be inspired, inspired with an overwhelming desire to get out to help humanity fight the battle of prevention against the ravages of caries and disease, instead of feeling that dentistry is nothing but "filling holes in teeth for a consideration," as Dr. Smith put it. In the records of the public clinics can be plainly seen the results of the present teachings. Filling operations run up into the thousands, but prophylactic treatments are very few in number, which is a sad reflection on the importance accorded preventive study in our dental colleges.

A great many people scornfully deride prophylaxis, because their fathers or their uncles perhaps have fine mouths and sound teeth and never had a treatment in their whole lives. They do not stop to consider that, in the first place, these isolated cases are the exceptions, rather than the rule, and one usually finds, upon examining these "fine" mouths, that conditions are pretty bad. Just because some people have never needed a doctor throughout long healthful lives is no reason why the medical profession shall be abolished. In the second place, conditions have changed so remarkably in the last few years. We are all, some more, others less, driving ahead at a furious pace which tends to weaken our resistance; we lead such sedentary lives that our tissues are flabby and easily infected, our elimination is poor, and our diet so entirely lacks any hard, fibrous constituents that we can swallow almost without chewing, thereby depriving gums and teeth of the healthful massage and vigorous scouring needed to keep them in good condition. Even dentists condemn prophylaxis, on the ground that it does not do much good. People's mouths nowadays, they say, are in much worse condition than they used to be, in spite of prophylaxis. That I consider an untruth, for, keeping in mind the evil effects of our present mode of living, I believe that, comparatively speaking, people's mouths are in better condition than they used to be. One becomes so accustomed to bad conditions and accepts them so much as normal that it is not until someone else comes along and points out the glaring evils that one suddenly awakens to the fact that they are there. Dentists were so accustomed to diseased, swollen, and inflamed gums, and large deposits of tartar, and teeth were so often pulled as soon as a cavity caused pain, that they never realized conditions as they were. Now, with constant agitation, everywhere they are on the lookout for such symptoms, and notice them. When I used to walk through the woods before I knew anything about birds, I scarcely knew there were any around. After I had learned their cries, notes, and calls, and then walked over the same paths, the woods were full of birds. They had always been full, but I had not noticed them.

Our child welfare work is a form of prophylactic work. We find a child in a bad environment, with evil influences eating black holes into his character. We change his environment before we do anything else for him or before he can do anything for himself. So with the tooth. Its environment is bad, in degree differing with the individual. Acids assail it, gummy plaques hold bacteria constantly in touch with it, loose gums hold fermenting food against it. What can we do? Even if we get the patient to carefully clean his teeth, he will not be able to do a great deal of good. What we must do is change the

environment of the tooth, neutralize the acidity, remove deposits and plaques, and eliminate pockets. Then we have a tooth in a favorable environment—then and then only, has the patient a fair chance to avoid trouble. A child needs constant watching and guarding even after being placed in a new environment, lest he slip back to his old bad habits; so also does the tooth, and that is why a patient should have regular treatments. One treatment or a few treatments is not prophylaxis. It is the constant watching, guarding and maintaining the mouth in a condition of health which constitutes oral prophylaxis.

Just to illustrate the deleterious effects of fatigue on the teeth, I want to tell you what some of our research workers have been doing along that line. They have been analyzing the salivas of the pregnant women in the maternity hospital, and have found that as gestation progresses and consequently fatigue becomes greater, the calcium content of the saliva becomes lower, the occurrence of caries greater, and the resistance of the mouth becomes weaker. ~~These results have been so constant that in the laboratory the experimenters have been able to tell from an analysis of the saliva how far pregnancy has advanced.~~ When one considers the life of the average person today, under the stress of rushing progress and in a state of constant fatigue, can one wonder that his mouth fails to remain self-protecting, but needs prophylaxis to keep it healthy? Bacterial plaques cling to the teeth; and the saliva, which should be the protecting fluid of the mouth, no longer is able to neutralize its acidulation by these bacteria or fermentation caused by them.

In my own experience and that of others in the practice of oral prophylaxis, certain definite results have been obtained. We find that prophylaxis does prevent caries of the teeth, gingivitis, and periodonticlasia, and will cure most cases of periodonticlasia in which destruction of tissues is not too far advanced.

It checks erosion and lessens sensitivity of the teeth, especially in the cervical area, and also lessens sensitivity of the gums.

It reduces inflammation of the soft tissues and resistance to disease is increased by decreasing the number of bacteria in the mouth and thereby raising the vitality of its tissues.

Putrefaction of all sorts of material formerly left in and around the teeth is eliminated and with it bad breath; salivary secretion becomes normal, and digestive disturbances are much lessened if not cured.

The appearance of a tooth changes—it takes on a life-like appearance, smoothness, and luster not seen in untreated teeth. The gums grow hard and firm and become that beautiful pink color which is the indication of health.

One most important result is the interest stimulated in the patient to take care of his teeth himself by educating him to a keen sense of uncleanness in the mouth. He can not know the difference between a clean mouth and a dirty one until after he has been under treatment for some time. My patients tell me they are actually uncomfortable after a dinner party because they can not brush their teeth, so sensitive have they become to the presence of foreign matter in the mouth.

Let me say right here that this education of the patient in the care of his mouth is very important. Patients must be firmly impressed by repetition and

reiteration that oral prophylaxis can not be a success if they are unwilling to cooperate with the prophylactist. If they do not carry out the instructions to take the utmost care of the teeth at home, the periodic treatments degenerate into nothing but house cleanings.

The permanent teeth in childhood are always rough, and if this roughness be not worn away by mastication and by the friction of hard fibrous food passing over them, they furnish ideal surfaces for collection of deposits, particles of food, plaques, etc., in the adult, making his mouth hard to cleanse himself—in fact, the harder he brushes, the more will he irritate his gums, brushing them over such rough surfaces. When such a case presents for treatment, all deposits are removed and these rough surfaces are planed and polished perfectly smooth. This naturally can not be done in one or two treatments, but extends over a long period of time. There are certain places so rough perhaps that they will need careful grinding before polishing. These rough spots are caused by irregularity of tooth structure. We all know how the enamel is composed of enamel rods, cemented together, running perpendicular to the surface. In various ways the cementing substance is eaten away and the weakened ends of the rods in one particular spot break off. This leaves a roughened pit in the enamel, which harbors tiny particles of food, plaques, bacteria, etc., and must be eliminated by grinding smooth, because such places are sources of irritation and acid formation and tend to decay.

From the beginning the patient is instructed in the method of brushing the teeth. That may seem unnecessary, but even dentists do not know how to most efficiently brush their teeth. Scrubbing back and forth is bad—we all know that. It abrades the teeth and injures the gums, due to the amount of force usually brought to bear in this method. The rotary method was thought good, but it does not accomplish results. The best method is the massage method, in which the gums get a large amount of massage from the side of the brush. By trying this method on the back of the hand, one will see why it is such a benefit and an improvement over other methods. Double the hand into a fist and brush between the base of the fingers and the knuckles, using the fingers for teeth. The skin is now taut and thus a bit more sensitive than its wont. Use the brush in the usual manner, bristles pointing to the surface to be brushed and brush hard. This hurts the hand, the bristles digging the skin. Now give ~~it~~ the massage motion, placing the side of the brush against the fingers with bristles pointing down and in brushing up, slowly turn the brush until the bristles are touching the teeth. No matter how hard one brushes, there is experienced but the warm glow of exhilaration, no irritation. Also notice that in the old way the bristles brush the rounded portion of the ~~fingers~~ ^{teeth} hard, but scarcely touch the places between, where most food lodges and decay begins first. With the massage motion, note that as the brush is slowly turned from its side, the bristles spring to the spaces between and if anything were there, it would be brushed out. The massage method of brushing, if properly carried out, cleanses all such dangerous places, besides furnishing the necessary massage to the gums. That is very important, the gum massage. Brush the gums thoroughly and the teeth can not help being brushed.

Then the patient is instructed as to the correct use of dental floss. It

makes me wince to see some people use it. At a tight contact they press down on both ends of the floss until it goes through with a snap, directly onto the delicate gum septum. Then they hurriedly saw back and forth on the gum septum and jerk the floss out again. The correct way to do it is to saw back and forth gently at the contact until the floss gradually works through and to slide it down the side of one tooth with a polishing motion, up again, over the septum, down the side of the other, up and out. To make assurance doubly sure, floss should always be used before a mirror, where one can see what he is doing. With a warning to be particularly careful about the toilet of the mouth at night, during which time of inactivity of the salivary glands and oral tissues the greatest destruction takes place, and with directions to remove all particles of food remaining after meals, the patient is well along the way to take good care of himself. If there is a rough spot or flake of deposit left under the gum, the massage brushing will show it up by a point of irritation on the gum. At this stage of the proceedings, true prophylaxis begins. The patient comes to us for the constant watching and guarding of the oral cavity against the entrance of anything that may impair the usefulness, strength, comfort, or beauty of the teeth.

We all know how careless children are about keeping their teeth clean—in fact, about keeping any part of themselves clean. It reminds me of the story of the man who came home one night, all puffed up with a brand new idea. "Mary," said he to his wife, "I've thought of a scheme to cure that young rascal of ours of winking his eyes so much. I'm going to tell him what I read—that every time you wink, you give your eye a bath." With the children in the practice it takes constant lecturing, pointing out lack of care in brushing, demonstration of the right way to use brush and floss, and everlasting reiteration of the same instructions and warnings. I have been thinking seriously of making a phonograph record of my remarks and running off the record whenever necessary. If children who have prophylactic care come back month after month with deposits, particles of food gathered between the teeth and yellow stains on them, just think of what happens to children who have no such care, lacking entirely the monthly admonitions and instructions given by a guardian angel in the guise of a prophylactic specialist. In all truthfulness, the children do not regard her as any such heavenly being, even though she is forever harping—it is on one string—the string of evidences that they have not kept their teeth clean. She is just fussy in the opinion of the child. Then think of the children who also have orthodontic appliances in their mouths, crowded teeth and the lack of occlusion so bad that the teeth can not be self-cleansing even in the course of mastication. The only saving feature is that the orthodontist sees them frequently and in working about the mouth dislodges a great many food particles and extraneous matter. However, enough is retained between visits at a constant temperature of 98.6° to cause fermentation, formation of acids, decalcification, and decay.

Whether you do the prophylactic work for the child yourself or have someone else do it, drill into him the importance of not only having brushes, powder, and floss, but to use them and use them efficiently. To steadfastly gaze at them lying on the bathroom shelf will not do one iota of good. Do you

remember the little boy who was so disgusted at the size of the product of his bantam hen? He finally procured an ostrich egg, laid it in front of the nest, and wrote in large letters on a sign, "Look at this and do your durndest." Most children seem to think that to thrust the brush in the mouth and make a few mystic passes with it is doing their "durndest." Of course with the massage method of brushing, the child must be watched, lest in carrying out instructions with all the literalness of which a child is capable if he does it at all, he injure his gums or uproot appliances.

The orthodontist, in order to accomplish the various objects of his efforts, must bring the teeth into occlusion. Occlusion is defined as the normal relation of the occlusal inclined planes of the teeth when the jaws are closed. The sizes, forms, interdigitating surfaces and positions of the teeth in the arches are such as to give to one another, singly or collectively, the greatest possible support in all directions. The cusps interlock and each inclined plane serves to prevent each tooth from sliding out of position. You know these statements are true—in fact, retention depends upon their truth—so do you not see why it is necessary to keep the mouth clean and healthy so that the teeth can not decay and destroy this necessary support? It is a well established fact that it is hard to do satisfactory filling work in children's mouths, it being very difficult to restore cusps according to natural forms and to get correct contacts. Therefore, the more fillings, the more points of deviation possible from a perfect occlusion. If no filling is done, further decay causes soreness of the teeth and makes mastication troublesome which is a great detriment. Sometimes the teeth are so sore that the child does not try to chew, but gets into the habit of bolting his food, a habit which will lead to digestive disturbances in later life.

There are many prominent men who are very greatly opposed to the correction of malocclusion—why, it is impossible for a broad-minded person to comprehend. The reason they give is the decay of the teeth occasioned by the appliances and they call such conditions of decay the crimes of orthodontia. In defense I have read that decay was caused by over-use of noble metals and it was urged that they be used less extensively. Apparently that writer had never heard of prophylaxis, because he did not mention it as a prevention for these "crimes." It is really the only prevention.

Dr. Frederick McKay, of Colorado Springs, said in a recent issue of one of our journals that he was more and more impressed that orthodontists failed to recognize gingival irritations before commencing treatment (a failing, may I add, that they have in common with a large number of general practitioners). As periodonticlasia sometimes takes thirty years to develop from the initial gingivitis, the orthodontist must accept his quota of blame for future conditions of disease because he has overlooked the early symptoms in children.

Dr. D. D. Smith says that the object of prophylaxis is to bring the human mouth into a state of asepsis and purity and to "permanently preserve the pericemental membrane" in its integrity; the teeth also, and all external tissues. During movement of the teeth, with bands and ligatures adding further irritation, and during retention, the fibers of the pericementum are under stress and remain on tension long after movement is complete, until the tissues are thoroughly reestablished in harmony with the tooth in its new position. One of the

factors on which depends the time required for retention is healthy tissues. For these reasons, because so much of the success of the work depends on the condition of the pericemental membrane, it behooves the orthodontist to provide that the health of this membrane be not endangered by an unclean mouth and to take care lest he fall down on the etiology and early pathology of gingivitis. Then too, he must not subject tissues already under strain to any further irritation.

It is safe to say that anyone who has had prophylactic care since childhood will never get periodonticlasia and will be able to go through life with a minimum of repair work. Even if it is carried on only during orthodontic treatment, a habit of cleanliness will be established that will continue for years, for it is a psychological fact that habits formed during childhood persist most tenaciously in one's future years. The greatest good in the education of prevention is accomplished by starting with the children. As they grow older, the ever widening influence of what they have been taught on those with whom they come into touch will do an untold amount of good.

You orthodontists with your practices composed almost exclusively of children, do you see what your share is in accepting the sweeping challenge of Dr. Mayo to the dentists? Orthodontists were not excluded. You hold the future health of many of these children in the hollow of your hands. Dr. William Hunter, a surgeon of Charing Cross Hospital, London, England, said that crown and bridge-work was bringing temporary comfort to some people, but had silently undermined numbers of lives at present well-nigh impossible to compute. It was a menace, not a boon to humanity. Make it impossible for any of your patients ever to be obliged to have such work done and take the risk of danger. Have you the welfare of humanity enough at heart to look forward thirty or forty years, and visualize the mouth conditions which will prevail unless you do your part now? It is a great and glorious responsibility. You can not shirk it—and you will not.

The American Society of Orthodontists

THE Annual Meeting of the American Society of Orthodontists will be held at the Elms Hotel in Excelsior Springs, Mo., Wednesday, Thursday, Friday and Saturday, September 5, 6, 7 and 8, 1917. The Board of Censors have already secured many valuable papers. A more detailed account of the program will be published later.—M. N. Federspiel, D.D.S., President, Milwaukee, Wis.; F. M. Castro, D.D.S., Secretary, Cleveland, Ohio; B. E. Lischer, D.M.D., St. Louis, Mo., Chairman Board of Censors.

PRESIDENT'S ADDRESS DELIVERED BEFORE THE PACIFIC COAST SOCIETY OF ORTHODONTISTS, FEB. 12, 1917

BY JAMES DAVID MCCOY, D.D.S., LOS ANGELES, CALIF.

THE time has arrived when we, as a body, must meet and discharge the duties and obligations incident to our annual meeting. As we enter upon our deliberations, we should not be unmindful of the responsibility entailed to ourselves, and to the special vocation we represent here upon this Coast, for a gathering such as this cannot but afford ample opportunities for increasing our capacity to better fulfill the obligations imposed upon us, in pursuing the arduous and exacting task of orthodontic practice.

The Purpose of the Society.—The purpose of this Society is the promotion of knowledge in all that pertains to orthodontia and its advancement as a distinct specialty, as well as to bring about fraternal and professional association of orthodontists, that through their cordial relationship, they may prove a help to one another.

Our aims will fall short of accomplishment, unless at all times we remain a thoroughly organized, efficient body, willing to work in harmony for the realization of our purpose, unhampered by professional jealousy, personal aggrandizement, and narrow prejudices.

The future will undoubtedly present many problems and responsibilities to us as an organization, and these we must successfully meet, if we are to retain our position as one of the chief factors for the progress of orthodontia on the Pacific Coast.

Restriction of Membership.—According to our constitution and by-laws, the membership in this Society is restricted to those who have received special training in the principles and practice of orthodontia; and furthermore, such members must be engaged in the exclusive and ethical practice of orthodontia. To some, such requirements seem far too strict, as they so greatly limit our membership at the present time. On the other hand, I feel that the accomplishments of our Society will be far greater and the resultant benefit to our specialty more telling through a smaller organization composed of men whose training and activities better equip them to cope with the problems with which we are so deeply concerned.

I trust we will not be misunderstood if we maintain this attitude as a Society, and that no one will be led to believe that we wish to establish an aristocracy in orthodontia, but rather, an academy which shall, as the years go by, become more and more a helpful factor for the advancement of our special vocation.

We are fortunate, indeed, to be engaged in the practice of orthodontia at a time when so many cobwebs of empiricism have been cleared from the structure of our specialty. Young as it is, its progress has been justly rated with the most advanced in the sphere of dentistry. The fact that the benefits of orthodontic treatment are fast becoming matters of common knowledge among the better

educated members of the laity, has resulted in a much more wholesome appreciation of the orthodontist, and a decidedly increased demand for his services.

This gratifying situation offers a decided contrast to the condition existing ten or fifteen years ago, when the demands for orthodontic services were so much less universal, and the appreciation of such services proportionately small.

The Practice of Orthodontia by Those Poorly Equipped.—The popularity of orthodontia has led many dentists who are only partially equipped to render such services, to attempt to add this branch to their practice. While this situation has its unfortunate side, it has doubtless been responsible for the dental profession coming to a more realizing sense of the demands placed upon the orthodontist, and has contributed in no small way to a keener appreciation of the real orthodontist by the profession at large.

On the other hand, it has given rise to a deplorable state of affairs, with which one is easily impressed upon a perusal of the advertising pages of some of our journals, and noting there the advertisements of dental laboratories and dental manufacturers who claim to not only make orthodontic appliances, but to furnish instructions for their use, so that the dentist wishing to handle such cases, may do so successfully (?) with their aid. Of course, the dentist who attempts orthodontic procedures under these conditions, displays an excessive amount of ignorance, and lack of appreciation of the demands of orthodontia, when he is willing to accept as a consultant, the mechanic whose knowledge of the subject, at best, is most superficial.

Dental supply men are also often called upon to furnish appliances which will correct certain cases of malocclusion. It is no wonder, then, that we hear of failures under such circumstances, for we all realize that when practiced even under the most advantageous circumstances, orthodontic procedures are often beset with pitfalls and discouragements.

It is to be hoped the time will come when the publishers of our various journals will come to a realizing sense of their responsibility in publishing such misleading advertisements as those referred to, for such advertisements belittle the science of orthodontia, and detract from the dignity of the journal which carries them.

It is a lamentable fact that many dentists who consider more or less seriously the question of perfecting their knowledge along orthodontic lines, seem to feel that the demands of orthodontia are, for the most part, met with upon acquiring the working knowledge of physics and dynamics of corrective appliances.

The Importance of Etiology.—As a rule, those who regard orthodontic treatment in the light of a purely mechanical procedure are all too apt to relegate the question of etiology to a position of secondary importance, their idea being that the correction of all local conditions which make possible along normal lines, mechanics of occlusion and respiration, etc., constitutes safety in treatment.

However, to the thoughtful and scientific orthodontist, the fallacy of this attitude is very apparent, owing to the fact in a certain percentage of cases, even where the most careful treatment and retention have been carried out, failure in some degrees ensues, leading us to the conclusion that there is yet a vast amount of information to be gathered concerning the etiology of malocclusion.

Dr. Angle has stated: "The causes of malocclusion to be intelligently comprehended, must be studied from the basis of the normal growth of the denture and its correlated parts. Most of the immediate causes are mechanical, yet whatever acts as a hindrance to nature, in performing her delicate offices in the unfolding of the various tissues composing the dental apparatus, hindering its growth, will be operative as a cause in producing malocclusion."

While almost everyone appreciates the mechanical causes, I think I am safe in stating that comparatively few appreciate the causes that lie deeper, and which "act as a hindrance to nature performing her delicate offices," which naturally leads us to the conclusion that the orthodontist, in justice to himself and his patients, should be as thoroughly schooled in the basic principles of physiology and pathology as any other surgeon who devotes his energy to the field of orthopedics, or who aims to direct development along normal lines.

Constitutional Disorders as a Factor.—In considering constitutional disorders as a factor, it is but natural to seek out those which are active in interfering with the progress of development in the dental apparatus, and which are injurious to the tissues which enter into the formation of the structures concerned.

As we reflect upon this point, we are impressed with the fact that in the dental apparatus, as we consider it, we have all the principal tissues which are found in the other parts of the skeleton, namely, epithelium, the connecting tissues, muscular, and nervous tissues. Therefore, we have no reason to assume that these tissues, as they are associated in the dental apparatus, are any less subject to the effect of constitutional disturbances than they are in other parts of the body.

Therefore, as emphasized before, until physiology and pathology become more of an open book to us than they are now, we will be at a loss to account for certain arrestments of development, occurring not only in our field of endeavor, but also in the human organism as a whole.

There is enough evidence, however, to lead us to think that certain diseases have an important bearing upon development, or more properly speaking, upon arrestments of development occurring in the oral structures. These conditions I will enumerate briefly as follows:

1. The ordinary diseases of childhood, which are accompanied with high temperature.
2. Congenital or hereditary syphilis.
3. Rickets.
4. Diseases of the internal secretory organs.

I will make no attempt to discuss the various phases of these subjects, for that has already been done at previous meetings of this Society, but would urge a more consistent observation of these conditions, as we uncover them in taking the histories of our cases, so that we can realize in a more definite way, their significance.

The last cause mentioned, namely, diseases of the internal secretory organs, brings to our minds a field which is, as yet, imperfectly explored, although we know that the internal secretory organs have a definite relationship to bodily

development and nutrition. We know that these glands, the principal of which are the pituitary, the adrenals, the thyroid, the parathyroids, the thymus, the testes, and the ovaries, are supposed to preside by virtue of their secretions, or in some cryptic manner, over certain correlations of the body.

"It has been claimed for these tissues and glands, that they are cooperative with, or compensate and inhibit, each other in cycle, and that any interfering influence or disease which disturbs this coordination, seriously and very diversely affects nutrition, bodily development and functions."¹ Just how great a factor these organs are in the etiology of malocclusion is a matter which physiologists will have to aid us in settling, but the importance of these structures is not to be underestimated, nor should we lose sight of them in our investigations.

Before leaving the subject of etiology, I would emphasize a point made by one of our confreres² that "the process involved in the establishment of malocclusion may be said to begin with the differentiation of the cells destined to become the future dental organs, and end with the completed, permanent dentition. If these are accepted as the two extremes of the period during which malocclusal conditions may arise, it is evident that there is a vast range of circumstances that must be taken cognizance of, if a careful examination into the causative factors of this disturbance be undertaken."

Fixed Versus Removable Appliances.—In reviewing the progress in methods of treatment during the last few years, it is interesting to note that fixed appliances have in no way lost prestige, and in fact, are now recognized almost universally by scientific orthodontists as the most rational and effective in our work.

So thoroughly has this been proved, that we hear little controversy or argument from those who, for a time, were loud in their claims for removable appliances. The old saying that the proof of the pudding is in the eating applies with significance in this connection, for it has been proved that through the proper use of fixed appliances, results can be obtained with a uniform degree of accuracy.

We all realize the great importance of being able to keep the force being applied to moving teeth under absolute control at all times. If an appliance can not be so constructed that we can maintain this control, it at once becomes a dangerous agent, relatively speaking.

Recent developments in orthodontic appliances make it possible for us to have more accurate control over applied force than we have ever had before, as well as making possible the application to the teeth to be moved, a degree of force which, in character, is best suited to effect the physiological changes so much desired.

Metals Used for Appliances.—"The materials used for the construction of fixed appliances have as much to do with the principle of fixation, as any other factor. For example, an appliance constructed of the noble metals will not disintegrate, its temper will always remain even, though attachments be soldered to it, and its integrity will never be impaired by use in the mouth."³

On the other hand, an appliance constructed of base metals disintegrates to

¹Grieves, Clarence J.: Am. Soc. of Orthodontists, 14th annual meeting.

²Hellman, Milo: Dental Cosmos, Sept., 1914.

³Casto, Frank M.: Jour. National Dental Assn., Jan., 1917.

a certain degree in the mouth, loses its temper through soldered attachments, and thereby its usefulness is often seriously impaired.

For this reason, I feel that the use of base metals as orthodontic appliances is contraindicated, notwithstanding the fact that such appliances are highly advertised, and by some few are defended with vigor.

In the opinion of your essayist, the only quality for which the base metal appliances can be recommended is for their cheapness, and often this fails to be an argument in their favor, as they require more time and trouble in manipulation.

It has been claimed by the exponents of base metal appliances that teeth banded with these materials are less apt to disintegrate than if banded with gold, platinum, or its alloys. It seems to me that such a claim will not stand the test of rigid investigation. Notwithstanding the fact that disintegrations do occur once in a while upon teeth carrying bands, a careful scrutiny of such cases will usually reveal the fact that this unfortunate condition was the result of either poorly constructed or poorly cemented bands, which made possible the lodgment of debris or the formation of plaques against the enamel surface, and was not due to the material composing the appliance.

In my remarks thus far, I have touched upon numerous subjects which appeal to me as important not only to us as a Society, but to orthodontia. In your consideration of my ideas upon the subject, I trust your discussion will be marked with that degree of candor which should exist between men brought together by the bond of a common purpose.

Perhaps, in our meeting, we will not bring out anything which is startlingly new or original, but we are certain, through our discussions and through our interchange of ideas, to be able to carry away much which will not only increase our capacity for better fulfilling our professional obligations, but will instill within us renewed courage and enthusiasm.

DISCUSSION.

Dr. Cavanagh.—Mr. President, Fellow Members of our Society, and Guests: I trust in consideration of the fact that this paper has been excellently and carefully prepared, you will expect but little of the one who is to open the discussion, especially since I have had no opportunity whatever of knowing the lines along which our President was going to speak. He touches first on the question of membership in this Society,—whether or not we shall admit those who are not following this work exclusively. We, who have taken special instruction in orthodontia, are in a much better position to realize the vast difference between the general practitioner who dabbles in some orthodontia, and those who are really qualified for practice, both by training and years of valuable experience. For myself, I feel if we admit those who are unprepared (not having taken a course) we have no way of limiting any man who performs any operations in orthodontia, regardless of whether he regards it as merely a mechanical procedure or not. We will have no way of excluding any of those who are endeavoring to perform orthodontic work, and if such be admitted, our Society would become unwieldy. Therefore, I think our membership should be limited in the future as it has been in the past. In order to do justice to the other points which the President mentioned, I would have needed the paper for perhaps many hours, and I might not have done so even then. We have, however, I think been postponing the treatment of cases until too late in life. Perhaps it was not our fault, inasmuch as our work is largely referred work. In orthopedic surgery, operations are not postponed until the child is ten, eleven, twelve or fifteen years of age. In the dental profession, unfortunately, many members advise the postponement of corrective measures until beyond the age when it is possible to obtain the best results with the least effort, inconvenience, and expense to the patient. All this shows that we still have important educational work to do.

I am quite a believer in the theories of Dr. Bogue, of New York City. In the articles published in the Dental Digest, I think some excellent points are being brought out. This Journal reaches more of the dentists than our publications do. Dr. Bogue recommends patients for treatment at a much earlier age than is ordinarily done. Several years ago I went over the cases I had had up to that time, and found the average age of patients referred to me on my return from the East after taking the course was twelve years. This was out of the first fifty cases. I find up to a year ago, averaging up the cases referred, the age had been reduced to nine years, and from the proportion of cases where only the deciduous teeth are present (in those cases I have on hand at this time) I think that age has been reduced to approximately seven years as an average age. That has been the result of my effort,—to reduce the age at which patients are referred to me for treatment.

There is very little more that I can touch upon at this time, although it deserves a vast amount of discussion. The fact that I did not have the privilege of going over the paper prior to coming here, will make my part of the discussion necessarily brief. I therefore will leave it in the hands of the other members present for further discussion.

Dr. Suggett.—Mr. President, I enjoyed the paper very much. For a number of years I have been much interested in the matter of the proper selection of appliances, and for some time have been using only the noble metals. It seems to me the objections urged to the use of these metals are practically the same objections which may be urged with reference to gold fillings and crowns. Some dentists think they see damage from the bands,—a damage which is exerted on teeth adjacent to those which are banded. If that is true, the same objection would apply to gold crowns and fillings, or any use of gold or precious metals that would touch another tooth.

As to the appliances, it seems to me from my own experience and from that of others, the tendency is drifting not only toward the direct attachments, but I think toward a smaller wire. For a year past I have not put on a wire larger than the .0225. That seemed small at first, but I know several years ago when I saw Dr. Young give a clinic with .030 wire, it seemed too small. But since then we have changed our method quite radically. Instead of using an attachment only from molar to molar, with ligatures, etc., we are now attaching to every tooth, or every other tooth and getting an attachment at every half inch instead of two or four inches. Since using the .0225 wire, I have found I can secure much better control and more rapidity of movement than with the .030 wire, for the reason that it is so flexible and is easier to manage and one can give a bigger spread to it than the .030 wire. Where you have an attachment, say to central or lateral incisors, you have such a small distance between the teeth that with the .030 wire your spread must be very, very small. With the .0025 wire, the spread can be much greater, and you can often let a case go much longer with it. It is simpler in making and there is no need of mechanical appliances for soldering. This eliminates the buccal tube, the middle section, and end sections,—so that this is a simpler appliance to use. I think there is no need to use pins that were furnished before at forty cents a pin. The .0225 wire is the same size as the pin we want to use, and you have the same rigidity you have in the wire.

The only objection I have found, is sometimes encountered with upper molars which are in lingual occlusion. I have found it difficult to jump the overbite. When this difficulty is encountered, I work with the case until about finished, leaving the molars still in lingual occlusion. Then with a short period of treatment with the buccal tube and 16 or 18 gauge wire, I move the molar teeth over and line them up quickly.

I think the tendency is toward the use of a smaller wire. Dr. Angle shows that tendency in his last appliance, and I think the profession is convinced that tooth movement does not require a great force but a constant one. In closing up a large space where a molar or bicuspid is missing, the smaller wire works better. We can get the loop with a spread that would work for two or three months safely and without any additional pressure being put on. The larger the wire, the less the change we can make each time.

The paper has touched on some of the deep causes back of some of these cases. These are the things that puzzle us. Two cases may be very similar in many respects: one may have the tendency to return for years and years, and the other to stay in its new position. So we feel there are many things we do not know yet, and so we are pursuing the subject with more and more open minds, and are willing to be taught. The dental profession feels we are not as dogmatic as we were a few years ago. We realize there is much to be learned by experience and from each other.

Dr. Engstrom.—The President's address was of considerable interest to me and a

number of factors were touched upon which I have thought about for some time past, particularly etiology and the retention of cases.

In regard to the organization of the Pacific Coast Society of Orthodontists, I am heartily in accord with the essayist in the desire that the membership be confined to those who practice orthodontia exclusively. No doubt the Society would become unwieldy, as Dr. Cavanagh stated, if a different course were followed. We have in our by-laws a section which states that every member shall take part in the proceedings of each session. This brings us closer together, and thus a great deal more good may be accomplished.

In regard to the etiology of malocclusions, undoubtedly it is very true there are many causes which are very much in the dark, as it were. Aside from the idea that malocclusions may begin at any time from the first operation of the cell to the completion of the dental arch, or later, it appears to me that if malocclusions may be acquired at a later period in life and corrected, that should a condition exist prior to birth, that condition may be rectified and not stand against the case as a hereditary element, as it were.

In our own work we may have two cases practically the same, but the result in one will be much more satisfactory than in the other. So it seems to me, there is a cause not to be accredited to the operator entirely, but which lies within the patient himself. If a disease attacks the body, we naturally have to depend upon the resistance of the body to overcome the disease, whatever methods may be pursued in the cure, and that resistance is in the patient. We cannot make it. And so in the correction of conditions of malocclusion, we must depend to a considerable extent on the ability of the patient to follow instructions and to do for himself that which would bring about a correction of the abnormal functions that existed prior to the treatment. That appears in some instances to be largely a matter of the mind and I have always considered the mind to be an influence in the formation of malocclusions and also in the correction of them. A person may use a part as he desires, and thus develop it properly or not. This may apply with reference to the use of the nose. Quite often the mouth is used for the nose. Under such conditions we are bound to have an abnormal structure so far as the mouth is concerned. Now, if the patient will not correct the habit by mental effort, the success of our work is practically nil, because the abnormal function that existed before the correction, surely will tend to bring about a return to the malocclusion. I thank you.

Dr. Martin Dewey.—Mr. Chairman and Members: There are a great many things in the President's address I could discuss and many things on which I could disagree with him, but I will not take that liberty to a very great extent. As to noble and base metals, I think he has referred to me, as I have advocated base metals. Several years ago we had a discussion in Chicago on this matter, and I was practically alone in advocating base metals. That certain metals possess certain properties you admit. Platinum has certain properties, and we would like to use something in its place, but we cannot find a substitute in the commercial world. Iridio-platinum has certain qualities making it desirable for use in regulating appliances, but it has no antiseptic properties. I agree with Dr. McCoy, to a certain extent, that a band properly fitted would not decay the tooth, yet some of the men in the East have said it was possible to have a gold band fitted so close to a tooth that you would exclude every bit of cement from between the band and the tooth. The value of the cement is evidently not understood for you can take a band off a tooth under careful conditions, remove a piece of cement from the band and get a beautiful culture of microorganisms. Cement does not possess as many antiseptic properties as we formerly believed. Now you can carry the experiment further, as has been done. In the mouth of the same patient you can have iridio-platinum bands and bands of base metal alloy. You can make cultures from the two bands using two different test tubes. The culture from the iridio-platinum band will contain twice as many microorganisms as those from the other band.

It is a fact, as Dr. Suggett has suggested, we need only to think of gold fillings and gold crowns. No doubt these do decay teeth. Self-cleansing fillings, etc., are necessary. We try to provide for mechanical cleansing,—to avoid the accumulation of debris between the teeth. We have to consider that the banded tooth has a certain danger to the approximating tooth. With noble metal touching a tooth, that tooth is always liable to decay. Many men are realizing this. How they will meet this situation we do not know. We know iridio-platinum has certain properties which make its use necessary in certain instances, but we should use a metal containing some proportion of copper and zinc. Metallurgists are working on it.

We need to realize that where noble metals are used, more scrupulous care must be taken than is employed by the average orthodontist.

Dr. Ketcham.—In speaking of noble metals causing decay of the teeth as Dr. Dewey expressed it, I wonder whether the percentage of decayed teeth where we have the noble metals in use, is any greater than in the mouths where no noble metals are used. For instance, in a mouth where amalgam fillings are used, it seems to me instead of a chemical or metallurgical problem, the decay of adjoining teeth is more a question of environment and prophylaxis, and it could be taken care of by cleanliness. I believe the endeavor of some of our operators to so shape their restorations as to make them self-cleansing, is simply an effort to reproduce the anatomical structure of the tooth the same as though the tooth had not decayed, and that in reality in our orthodontic appliances the question of decay is primarily one of prophylaxis. In other words, is the likelihood of decay where precious metals are used and where alloys containing a greater percentage of copper and zinc are used, very much greater in the one case than the other? The edge of an iridio-platinum band may be raised a bit,—the cement washes out and we have decay. When a German-silver band is used, we may have more stretch, and the same is true of some of the gold alloys, coin gold, for instance. It is a question whether scientifically the use of gold and platinum in juxtaposition to a tooth will render decay greater or not.

Dr. Solley.—I am sorry I was not here to hear the President's address, as it would have been of great interest to me. Three years ago I brought a subject before this Society and have been doing considerable experimenting on it since then, and I have had the idea that I was probably the only man having trouble along this line. I dropped the subject and am sorry I did. At that time I had one particular patient where I had been using platinum appliances and had much disintegration and had to do something and so I turned around and used certain base metal appliances. With the use of these latter appliances I had fully 85% improvement, I think, so far as disintegration of tooth structure is concerned, in that particular mouth. It was a very serious case, and I felt it was the only way I could have carried the case on. I saw the patient six months ago and I still have that particular retaining appliance on.

I wish to ask Dr. Dewey a question as to cements and cultures. Has he tried any of these new copper cements which are on the market? Is there any improvement from the standpoint of disintegration in the use of these copper cements?

Dr. Dewey.—Copper cement has a decided antiseptic property, and I should have qualified my statement as to cements. Cements containing 3% copper, have little antiseptic properties. Copper cement containing a greater percentage of copper has much greater antiseptic value.

With reference to Dr. Ketcham's remarks as to iridio-platinum, and gold and platinum, and the liability of tooth decay, I think scientific findings are what we want. Iridio-platinum and gold have no antiseptic properties. The other metals mentioned do have. You can prove the question in regard to these metals by making an experiment on agar-agar plates. Take the iridio-platinum and the gold and platinum and the microorganisms crawl up over the metal. While around metal containing copper or zinc you will find a clear space. The microorganisms have died.

I could cite you a number of men, prominent in the orthodontic world, who are discontinuing the use of iridio-platinum and gold and platinum. A large portion of the cases of decay in many mouths can be traced to the use of noble metals. It is a fact and not an imaginary proposition. The experience of Dr. Solley has been the experience of a number of men, and while we must use noble metals, we must not deceive ourselves, because a band keeps clean, into a belief that it may not cause decay of a tooth. A thing may be perfectly clean macroscopically, and still be covered with microorganisms. This decays a tooth, and not the oxidation of your appliances.

Dr. Hampton.—I am just a visitor here and I appreciate the kindness extended to me, and I have enjoyed the President's address very much. I am in general practice. I noted Dr. Dewey's statements with reference to tooth decay occurring adjacent to a gold filling and his remarks with reference to zinc and copper. Is it a question as to whether the galvanic action destroys the microorganisms, where you do not have that action in the so-called noble metals? I have been interested in that question for a long time. Having been a farmer in my earlier life, I found posts in the ground did not decay as much in the ground as above the ground and you find that the case where you have the gold fillings and the copper or zinc fillings adjacent,—where below the gum or above the gum may have a similar effect.

Dr. Carter.—Mr. Chairman and Gentlemen: I came in almost too late to hear enough of this paper to discuss it, but relative to whether or not it is best to use noble metals

or some metals containing copper and zinc, I believe a great deal of the decay going on in the mouth is not entirely due to the metals that we use but is probably due to a lack of prophylactic measures many times. I believe we sometimes put bands on teeth and send the patients out and tell them to return in a month. It appears to me that it would not make a lot of difference whether platinum or gold or base metal appliances were used, there would be a great liability of decay under such circumstances. Although there may be some merits in the base metal in appliances, I think much of our trouble could be eradicated by better attention to prophylaxis in many cases.

Dr. McCoy.—I will not consume any time in closing the discussion. I was sorry not to be able to place this paper in Dr. Cavanagh's hands prior to the meeting, as it placed him at a disadvantage, but in rush of preparation for this meeting my address was not completed in time to get it to him.

I am much pleased to think my remarks have evoked as much discussion as they have, and I trust that even though we may not have settled anything definitely we may feel stimulated to direct our energies along the disputed lines and eventually do our share in their settlement.

THE QUESTION OF A UNIVERSAL APPLIANCE*

BY HARRY P. BEASER, D.D.S., FRESNO, CALIF.

AT the time the healing art became recognized as such and was separated from the barber trade, the search for a panacea for all ills began. As time progressed, the different departments of the "Profession of Medicine," as it was now called, began to divide into specialties, and the search has continued, the searchers declaring from time to time that the wonderful discovery has been made, and therefore the troubles from that particular thing are at an end forever. The statement that the drug, the apparatus, the appliance, or the process system was all that any one need have to accomplish the perfect result has often been heralded, but has always proved false.

As this was true in times past, it is equally true at the present for one need only to pick up a magazine, technical or otherwise, to read the announcement of some one claiming that he has at last discovered the necessary thing to fill all the requirements in the treatment of this or that, and it is further stated that it is so simple that most any one can use it. All you have to do is to get the original article, usually patented, from the inventor or his agent, and the result will follow without any further attention from the operator.

As we are naturally a mechanically inclined race of people, and dentistry being largely a mechanical science, it follows that a great deal of attention is directed toward dentistry by the panacea searcher, and the science of orthodontia, being carried on practically altogether by mechanical means, receives a full share of attention.

There is no doubt but that most inventors of systems and universal appliances are absolutely sincere in their statements regarding the uses of their inventions, but their enthusiasm over their discoveries leads the unsuspecting and under-educated person to believe that all that is required is to adjust the appliance to any case, turn the crank, and grind out the result.

*Read before the Alumni Society of the Dewey School of Orthodontia, Chicago, Ill., March 13, 14, 15, and 16, 1917.

Experience soon tells them such is not the case, no matter how clever they may be in the technical part of their work. The fact that they have overlooked the most important thing—diagnosis—never occurs to them. If it were not proved in a great many other ways, this would be sufficient to show that the appliance so represented was not universal and could not be applied to every case. More proof can be obtained by reviewing the statements made by the originators of so-called universal appliances and systems. One need only to study briefly some of the appliances first invented and shown to the profession with explanations and arguments given to prove that the treatment of malocclusion can be accomplished by the proper handling of said mechanism in all cases. A few years later, a new appliance is evolved by the same person, or some one else, and the same statements made in regard to the latter that were made in regard to the first. Coming on down a period of five or six years more, orthodontia is again revolutionized, and the orthodontist is asked to believe that the latest creation is the only thing, and to discard all others regardless of what success may have been obtained through their use. Thus have the originators admitted the weakness of their arguments in the first cases without giving sufficiently more to substantiate their demand for the position of the universal appliance, in the latter cases.

The profession as a whole is largely to blame, being prone to accept anything that is offered and will afford an easy means to an end. They have demanded hard and fast rules of procedure because they have been too busy to think for themselves, or, as it is in some cases, their (professional ?) thoughts have never gone beyond the sign of the dollar. However, let this be as it may. The time has arrived when the majority of the men, entering the special fields, realize that there is something to be made out of the profession besides money, and are, therefore, demanding the reasons for statements made, instead of accepting them blindly. Their course of procedure is based upon scientific facts produced by research workers and not upon faith or sentiment, and they have learned that no success can be obtained without thorough knowledge, close study, and hard work.

Physics has given us certain mechanical forces which are simple to understand, the only difficulty being in measuring the power of these forces: e. g., two pieces of wire of the same kind and size will be found to possess vastly different degrees of elasticity and their other qualities will vary considerably in relation to each other. Unless this fact is thoroughly understood and taken into consideration in the construction of an appliance, a normal physiological tooth movement will not be obtained except by accident. The only difference between appliances is the difference in their construction, attachment, and the materials from which they are made. The forces are the same, so upon the construction, materials and manner of attachment hinges the whole question.

No form of treatment should be undertaken without a thorough diagnosis, and diagnosis in orthodontia means more than simply classification of the malocclusion. It must be made from many other different points of view, as physiological, anatomical (both general and special), mental, moral, psychological, etc., all of these having a strong bearing upon the treatment to follow, and unless taken into consideration, the operator is working in the dark.

To go into these points more in detail, the following points will be determined: Upon superficial examination, what is the malocclusion,—a mesiocclusion, a distocclusion, or a neutroclusion? What are its complications? Which of the natural forces of occlusion are upset and working in disharmony? What are the causative factors which are to blame for this disharmony? What is the physiological condition of the patient at the present time, and what has it been in the past? Anatomically, what is the general build of the patient? To what general type does he belong? Which of the basic forms of teeth has he, or what modifications of the basic forms does he possess? Do these points correspond, or are they opposed to each other? What is his mental capacity and also that of his parents? From the psychological side of the question, what is the attitude of the parents or guardian towards the work to be done and toward the operator? The moral point, or the moral risk, is the risk that the operator takes, and may be likened to that which a banker considers when making a loan. A careful and complete history on all the points must be obtained from the patient and as much as possible from the parents. If any one of these considerations are overlooked, it will fall just that far short of being complete and whatever is left out of the diagnosis, a corresponding part is left out of the treatment. A negative or a positive answer to any of the questions will make a very decided difference in the prognosis and treatment.

Treatment, in orthodontia, to a great extent, means the use of appliances, and it would be just as reasonable to assume that an orthodontist could treat all cases of malocclusion with the same appliance, as to assume that a physician could treat all diseases with the same kind of medicine.

Each basic type of malocclusion, if viewed separately, might be said to require the same mechanical forces applied in the same way, and I am inclined to believe that the originators of systems and universal appliances have viewed the whole subject of orthodontia in that way only, failing to take note of the other points in the diagnosis and their relative effect upon the treatment.

Each basic type of malocclusion is brought about, usually, by the same primary cause. The complications which we find in each of the three basic types, are produced by the secondary causes, which are mainly the forces of occlusion working out of harmony, having been upset by the primary cause. However, there will be found enough difference in the individuals, physiologically, anatomically, mentally, socially, etc., to require an absolutely different, or a much modified, appliance in each case or group of cases.

One may take twenty cases of the same type of malocclusion and not find the diagnosis corresponding exactly between any of them. Two will not be found having exactly the same physical build and strength, and all the different facial and tooth types will be present. A vast difference will be found in their social and mental status, and psychologically viewing them, each will form an object of study by itself.

Although some small differences may not have much bearing upon the treatment, it can readily be seen that the appliance indicated in one case might easily be contraindicated in another. The shape of the teeth in one case would

permit of an easy application of ligatures, while in another it would not. The ease or difficulty of adjusting bands would be governed in the same way.

The environment in which the patient lives, his personal habits, and the attitude of his immediate family will have much to do in the selection of an appliance, and the prognosis.

Whenever an orthodontist accepts a case, he assumes a responsibility and with it a certain risk, and unless he considers long and carefully all the points of diagnosis, his course of procedure may be wrongly influenced to such an extent as to make a successful result impossible.

As we know, appliances are divided (relative to their attachment) into two groups,—the fixed and removable, and a third might be added, the fixed-removable, as Dr. Eby terms it. Each of these has qualities in its favor and other features that are not desirable; but what would be an undesirable feature with one patient would be a very desirable feature with another, so the consideration of the appliance is decidedly secondary to that of the patient who is to wear it, or to diagnosis.

The argument might be put forth that an appliance in the hands of one man is much more efficient than in the hands of another, and there is much truth in the statement, but in this paper I am assuming, for the sake of argument, that all operators are equally skilled. Therefore, if an appliance possesses virtues for one, it certainly must possess virtues for all, and if any orthodontist finds that he cannot produce the degree of success that some other one has in the handling of an appliance, he discovers thereby his own deficiencies and should immediately train himself to master the art. It is true that the same principles might be exemplified in different ways, and also certain appliances may possess a greater number of qualities than others, giving them a wider range of usefulness. Some may approach the goal of universalness much nearer than others, but none will ever reach it. The principles of orthodontia cannot be exemplified by any one system or appliance, and as soon as the profession realizes that the appliance must fit the case, instead of the case fitting the appliance, just that soon will it begin to conserve its energy and apply it in a more useful direction. It is unwise to attempt the impossible, as it only wastes time. The principles have already been discovered so it is better to exert one's energies for the possession of knowledge and train oneself in technical skill if a perfect result is desired.

PRESIDENT'S ADDRESS BEFORE THE ALUMNI SOCIETY OF THE DEWEY SCHOOL OF ORTHODONTIA*

BY A. C. GIFFORD, D.D.S., OSHKOSH, WISCONSIN.

IT is with pleasure that I greet you, friends and members of the Alumni, and I welcome you most heartily. As we come together for this meeting, we let our minds wander back to that last meeting about a year ago in Kansas City and think of the good things we absorbed there. Those of you who attended that meeting have, I know, been helped in your year's work and I know

Delivered before the 7th Annual Meeting of the Alumni Society of the Dewey School of Orthodontia, Chicago, Ill., March 13, 1917.

that you who are present now will gain information of even more value than we did then, as the program for this meeting can not be outclassed. I think you will agree with me that it will be almost impossible to digest all this in the short time we have, but we will have food for thought. Were it not for these meetings, we would not advance our science, neither would we advance in our science. Naturally each meeting of this society will be larger and if we all put forth the effort, we can have meetings that will be talked about throughout this country and will not be lacking in one single unit. We now have members in the North, South, East, and West, and we can form a federation by which we can select the best talent in oral surgery, oral prophylaxis, roentgenology, pathology, and orthodontia. A knowledge of all these subjects is necessary, I think, and in this way we shall get a clearer conception of what the results will finally be. We can not practice orthodontia without this, and give our patients what they expect—efficient service.

Not so many years ago a specialist in dentistry or medicine was rare, now there are specialists in almost every phase of both sciences. It will not be long before each of our most talented men will have his chosen specialty and then the laity will be taken care of as it should. No man can give his best efforts to more than one class of work. If the mind is upon one particular subject, that he can do most perfectly. If we are to become proficient in orthodontia, we must take time for the study of methods and so forth. Each case coming into our hands for treatment must have its share of careful study if our results are to be perfect, as a completed case should be. The more familiar we become with our work, the more we realize our responsibility, and as I heard one of our foremost orthodontists say not long ago, "When one begins practice in the chosen specialty of orthodontia, he thinks he knows all about it; but after ten years of work and study, he is still far from knowing it all." It is so easy to fall behind the line that we must grasp every opportunity to keep up with the procession.

Orthodontia of today is not what it was even one year ago, for the progress it is making is wonderful. The advance has been along lines of bodily tooth movement, and I think we will find that this is the most practical movement, inasmuch as the case will be completed when we are through treatment, and will leave nothing for nature to do. When the teeth are tipped, we expect nature or the force of the inclined plane to complete our work, and sometimes it does and sometimes it does not. It is the aim of our most eminent specialists to produce results without the disfiguring, conspicuous appliances of former times. It should be our purpose to use appliances which do not disfigure the patient with unnecessary ornaments, if we can produce perfect results thereby. We will have an opportunity at this meeting to see what can be done without the use of disfiguring appliances. I think that you will agree with me, however, that the appliances with which the teeth are moved into alignment and occlusion are not so important as the apparatus that shall retain our finished results. The plain arch and anchor bands will in a given time, with the proper attention and ligation, bring the teeth into occlusion or near occlusion. The occlusion that has not been produced by this method will be produced by the inclined planes if the teeth are in a position so that the force of the inclined plane

can act. Retention is one of the greatest problems of orthodontic practice. How often have we produced normal results and put the teeth in proper alignment only to find after a little while that our mechanical ideas as to the retaining appliance have not held and that the teeth are again "homeward bound." A tooth that has been in torsion is most liable to wander back or part way back to the abnormal position it formerly occupied. Especially is this true in cases where the patients are of advanced ages. It is for those of us who are mechanically inclined to bring forward some retaining device that will not include conspicuous bands, and still hold the teeth where they belong. I am aware that each case requires a different method of retention, but one can make whatever he desires if he has some nucleus upon which to build.

If we expect our results to be successful, we must be sure that our patient has enough space for the third molars to erupt. The patient must be kept under observation as much as possible for if these third molars, especially inferiors, have the least wedging force, it is impossible to keep the teeth in alignment. I have been consulted by clients at the age when third molars were erupting, and I could not understand for a long time why the teeth should become so irregular at that time, but after careful thought, I convinced myself that there lay the cause, consequently I am advising the extraction of third molars when present, and I find I have less trouble.

I am of the opinion that we should help the general practitioner to have a better conception of the diagnosis of abnormal conditions and the causes producing those conditions, for this is where our dental colleges fail. Orthodontia in a dental college should not consist of making bands and fitting arches, but in the study of the general condition of the oral cavity pertaining to abnormal conditions and to the causes of malocclusion. I do not mean Class I, II, or III, or neutroclusion, distocclusion or mesiocclusion, but the general diagnosis of the entire oral cavity. There are few I find who recognize malocclusion when it is present. Can the general practitioner do justice to his patient if he is unable to diagnose malocclusion? Are not these children sent to him by their parents or guardian for service and advice? Many a general practitioner has lost a good client by not seeing these deformed mouths before some "Good Samaritan" informed the parent that the child needed orthodontic treatment. A knowledge of the force of the inclined plane is very essential to the general practitioner as we find fillings that are smooth, and crowns that are like tin cans with no approximal contact. How are the orthodontists to get and keep perfect results when the teeth can not occlude properly and retention is almost impossible?

Our program shows that we are to have an address on orthodontic legislation which is something we have not had heretofore. If any one needs legislation, it is the orthodontist; and I hope we may be able to put something before orthodontists and members of the dental profession that will finally become a law.

It has been the custom heretofore to hold two meetings each year, but I found that we had almost two different classes at each meeting. I thought perhaps they would all come at once, and I believe I was right, for we have never had the attendance we will have at this meeting.

Before closing this address, I wish to thank the members of this society for the honor they have conferred upon me in choosing me as their presiding officer for the past year, and I also want to thank the secretary, treasurer, and members of the various committees, who have worked so nobly to make this, our annual meeting, a success.

ORTHODONTIC APPRECIATION*

BY OSCAR BUSBY, D.D.S., MARSHALL, TEXAS.

Dental Surgeon, Texas and Pacific and Marshall and East Texas Railways Company.

MR. PRESIDENT and Gentlemen of the Alumni Society of the Dewey School of Orthodontia: After receiving the second letter, from the chairman of the program committee, stating that in order to make this the greatest meeting in the history of this society, every alumnus was expected to contribute to the program, through my appreciation of the already great accomplishments of this society and my loving gratitude toward its founder and members, I have consented, though conscious that my sense of duty is greater than my ability. There is nothing of clinical nor scientific value in this paper, but if in its consummation you should find some intrinsic stimulation, I shall feel repaid for this exertion.

The development of orthodontic appreciation has followed closely the development of orthodontic science and has its culmination in the successful application of the practical principles of orthodontia. In the beginning of his own career, in a community where modern orthodontia has never before been practiced, the orthodontist should be keen enough to recognize the difference between mere orthodontic enthusiasm and real orthodontic appreciation. The former, while a necessary element, may be inspired by plaster models and various regulating appliances which serve only to the imagination and enthusiasm of both his patients and himself. Such enthusiasm is based upon unfinished work, while on the other hand, through the intelligent application of the scientific principles of orthodontia, this enthusiasm resolves itself finally, into the appreciation of finished work, thus slowly establishing in the minds of the community that confidence and recognition which orthodontic treatment deserves.

Malocclusion of the teeth and its treatment has, in all periods of civilization and intelligence, attracted, in varying degrees, the attention of writers and practitioners of both dentistry and medicine as is attested by Dr. Weinberger's excellent "History of Orthodontia" in which is shown pictures of the crudest appliances and the most primitive conceptions of their application. From these crude appliances and primitive conceptions a few men, who had both the ability and inclination, have developed a direct and positive science, a science embracing sufficient work and study to occupy the entire time and consideration of the most learned scientists and practitioners of the present time. Those men who are the greatest

*Read before the Alumni Society of the Dewey School of Orthodontia, Chicago, Ill., March 13, 14, 15, and 16, 1917.

factors in developing modern orthodontia, realizing the enormity of the subject, are insisting that orthodontia is a specialty in the field of dentistry, requiring special training and equipment for its successful performance.

This is the child age. Never before in the history of the world has there been so much serious thought devoted to the care and development of child life. In every development of organized society there are those who are interesting themselves in the welfare of the child. Educators and scientists are exerting their energies to the mental and physical development of the child. Orthodontia is recognized as a material factor in both.

Everybody is interested in this new science. The public confidence in orthodontia can by no other method be measured than by the success of the treatment attending it. The appreciation of orthodontia, then, is in direct proportion to the success or failure of the men performing the service. In many communities orthodontic appreciation is rapidly developing, while in others, I do believe on account of the character of work already performed, this appreciation will be long deferred.

European Orthodontia Society

My Dear Fellow Members!

Two and a half years have almost passed since we had our last, very successful, meeting!

Hardly could one at that time have believed that we would be obliged to postpone our next meeting so long,—but the terrible war which, since this time, has been devastating Europe, naturally makes international professional meetings impossible.

Still the science of orthodontia, in its modification, has made enormous progress in all the different belligerent countries and has proved to be an absolutely indispensable and much needed help in war-surgery, in the treatment of facial wounded soldiers, and it is most gratifying to dental science in general, but to orthodontia in special, that so many human beings, otherwise spoiled for their whole life have, through our art and by our professional brothers, been treated and cured.

Together with our most sincere wishes for you and yours for the coming new year, we express the hope that the interest in our science, when peace is restored, will be strong enough to bring in all our members together again, joined in earnest work for the progress of orthodontia, to the benefit of mankind!—Cordially yours, G. Lind, President E. O. S., Keizersgracht 542, Amsterdam, Holland.

New Year, 1917

DEPARTMENT OF DENTAL AND ORAL RADIOGRAPHY

JAMES DAVID MCCOY, D.D.S., EDITOR,
LOS ANGELES, CALIF.

A CONSIDERATION OF SOME PHASES OF X-RAY MACHINE CONSTRUCTION FROM AN ENGINEERING STANDPOINT

BY J. B. WANTZ, E.E., M.E., CHICAGO, ILL.

SOME time ago, an article entitled "The Price of Progress" was published in the *Interstate Medical Journal*. This article showed how the rapid developments in the field of roentgenology cost the medical profession and the manufacturers great sums of money. In the case of the doctor, this cost was due to the fact, that, before a first class machine had become at all impaired through use, it was so far out of date, that the doctor was forced to purchase a new one. As can be readily understood, the loss of money the doctor suffered was due to no defect of the machine itself, nor was it due to some fault of the manufacturer, but was caused only by the rapid progress of the art, and the author, therefore, rather aptly called this "The Price of Progress."

The money paid out in this way brought a tangible advance in the method of using and generating the x-rays. In other words, the advantages of a certain amount of knowledge were obtained by the spending of this money. This knowledge, once gained and paid for, is not the property of the individual, but of the world at large, and it should be so considered.

Engineering in its broadest sense is the application of known facts and principles to new problems. Dental radiography is, comparatively speaking, a new science. Its importance is such that a prominent professor of dentistry recently said, "I would buy an x-ray outfit if I had to mortgage my office to do it." Fortunately, dental radiography is very closely allied to general radiography, as employed by the medical profession. The latter is already well beyond its infancy, and is, in fact, a recognized and respected branch of medical practice. Looking then at dental radiography from the viewpoint of an engineer, what would be more natural than to apply the principles and methods learned in general radiography to dental radiography. The "Price of Progress" in general radiography has already been paid—knowledge has been gained. What is more natural than to apply this knowledge to a science so closely related to the one in whose development the knowledge was acquired.

From an economical and an engineering standpoint, then, it is but natural to expect that the manufacturers, in designing machinery for this new purpose, would bear in mind the knowledge and experience so dearly bought in their old field of endeavor. One has but to look through the catalogues of some of the manufacturers of x-ray equipment for dentists to know that the answer in

many cases must be "No." Whether through a desire to exploit this virgin field, whether through a wish to unload old apparatus, or whether through inexcusable ignorance will in the end make little difference. A retrogression in the class of machines advertised is apparent, both from the economical and the engineering standpoint. It is safe to say, then, that if these machines are sold, the dental profession will be forced universally to pay the "Price of Progress" for knowledge which the world already possesses.

There are machines advertised which consist of an induction coil with a fixed primary winding, a single point "self-adjusting" electrolytic interrupter, a fixed resistance supposed to "regulate the tube current gradually," a milliamperemeter, and a valve tube. The milliamperemeter is the only piece of apparatus in this entire machine which is applicable to a modern x-ray generator.

The induction coil with a fixed primary winding has been discarded by all manufacturers of x-ray apparatus for the medical profession, for all machines except some of the very smallest. A catalogue, issued by a once prominent x-ray coil manufacturer in 1907, fails to show a single coil with a fixed primary winding, although twenty-six outfits are listed.

The type of interrupter, advertised as a "self-adjusting" electrolytic interrupter, has not been used by any large manufacturer since about 1905, on account of the necessity of controlling the amount of current admitted to the apparatus by the variation of the amount of the electrode point exposed to the action of an electrolyte. An interrupter of this general design is described in a catalogue issued in 1907. There is, however, a method of controlling the amount of the point exposed in that interrupter, which is not the case in the interrupter in question. The description in the catalogue states that this improvement (the method of controlling the amount of the point exposed) was one of the things which made the interrupter practical. The use of the interrupter direct on alternating current is also "taboo" with most responsible manufacturers, as, in nearly all cases, rectifiers are listed with alternating current outfits.

The amount of energy transmitted to the apparatus can, as before mentioned, be controlled by the area of the surface of the interrupter point exposed to the action of the electrolyte. On all machines, since practically 1900, another means of control was provided; namely, a rheostat by which a more refined and gradual control was possible. In all cases, however, some resistance was always left in circuit. This resistance acted to limit the current when a very soft tube was used. Without it, the tube would "pull" enough energy to destroy itself. The fixed resistance then acts only as a current limiting device, and therefore could not be used to "reduce the current so that the x-ray tube..... may be regulated gradually" as the advertisers so blithely state of their "resistance unit."

When an x-ray tube, energized by a coil, begins to show "inverse," it is a sign that the tube is too soft for the voltage impressed across it; that is, the resistance of the tube is so low, that the electromotive force, generated by the make of the primary circuit, is great enough to force current through the tube in the wrong direction. The proper and standard remedy for this is to cut in more inductance,—decrease the ratio of transformation, by putting more pri-

mary turns in circuit. This procedure will lower the potential delivered by the coil, so that the electromotive force, induced in the secondary at the make, is no longer great enough to force current through the tube.

Now, if the coil is one in which there is no possibility of changing the ratio of transformation,—in other words, if the coil has no inductance switch,—there is no possibility of eliminating inverse by this method. There is, then, only one method left—the valve tube.

Theoretically, the valve tube is a good thing. Practically, it is not. A gas-filled x-ray tube, as all radiographers know, has a vacuum which must be frequently adjusted. The valve tube, too, has this self-same vacuum, and, in order to operate efficiently, must be adjusted very exactly. The radiographer, by using a valve tube, greatly increases his own troubles and complicates the operation of his apparatus.

As far back as 1907, valve tubes were not in great demand among the members of the medical profession. In fact, a catalogue of a prominent manufacturer, dated June, 1907, and dealing altogether with x-ray apparatus, fails to say a word about valve tubes, although twelve of its thirty pages deal exclusively with induction coils and coil accessories.

Another catalogue, of one of the largest coil manufacturing companies in the world, lists nineteen coil outfits, only four of which are equipped with valve tubes, and these four outfits are equipped with *triple* valves, in addition to the inductance switch, merely as an extra guard against inverse. The coil in question, however, has only a single valve to ward off inverse.

Now, if we trace the development of the induction coil, we see in it a perpetual fight against inverse. First, the series spark gap, then the valve tube, and last of all, the inductance switch, mark epochs in the struggle. The final product of this long period of development is, *on direct current*, a machine to be reckoned with. It is a coil with a potential high enough to break down a twelve inch air gap and with enough iron in the magnetic circuit and enough copper in the electrical circuit to make a large milliamperage output possible. An inductance switch of at least four or five steps is always provided. The interrupter is either one of the gas-filled, mercury-turbine variety, or it is a multiple-point, electrolytic break with devices for making very close adjustments of the points possible.

The rheostat, too, shows the result of evolution in that instead of being merely any old regulating resistance, it is a rheostat of special design, with a great many points, and capable of running long periods with a high energy output without overheating. On alternating current, however, even this coil cannot do the work because of the necessity of rectifying elements and their attendant troubles.

As mentioned before, this type of coil is a very capable piece of apparatus on a direct current, but then *only* when it is in the hands of an experienced operator. You have three points of control to set or to operate when running the machine; namely, the inductance switch, the interrupter, and the rheostat.

On the modern x-ray machine,—the Interrupterless—there is merely a rheostat to be set. The result is that with a modern equipment, the operator has to spend a great deal less of his time and thought in the mere mechanical

act of operating his machine, and will, therefore, have more of his time to devote to the serious part of his business,—the patient.

This ease of operation is entirely due to the fact that this modern machine develops no inverse and needs no interrupter, because the current energizing it is alternating in character. This last fact is one drawback to this type of machine; when the service current is direct, it is necessary to provide each machine with a rotary converter of large capacity to change this current to alternating, but the simplicity of operation is still there.

The Interrupterless is, then, speaking in general, the real x-ray generator. With this in mind, it can be readily seen that if the manufacturers have enough foresight to apply the knowledge, which the "Price of Progress" has purchased for them, then the Interrupterless is the machine to be used in dental radiography.

As the field of dental radiography is new, new conditions will be found and, no doubt, a new machine, for this particular purpose, will be developed. If this is the case, by all means let the Interrupterless be the groundwork, for in it we have a sure foundation, proved by experience. To go back to the induction coil, is retrogression,—is an attempt to halt the march of progress; worse still, it is a disregard of all engineering principles, and those unfortunate enough to be misled by the selling patter of the wily agent will again be called upon to pay the "Price of Progress."

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EDITORIALS

The Efficiency of the Lingual Arch as a Regulating Appliance

IN previous issues of this journal (Nos. 10 and 11, Vol. II) we published two articles on the lingual arch as used by Dr. Lloyd S. Lourie, of Chicago. In this issue of the journal we are publishing a short description of the technic of the lingual arch as used by Dr. John V. Mershon, of the Thomas W. Evans Museum and Dental Institute School of Dentistry University of Pennsylvania. That we have faith in the possibilities and efficiency of the lingual arch goes without saying, or we would not devote so much space and time to this appliance. The policy of the *International Journal of Orthodontia* has always been to give its readers such articles as we believe have some practical value, either to the man engaged in the practice of orthodontia as a specialty, or the man who is compelled to do orthodontia with his general practice. We are publishing these articles on the use of the lingual arch because we believe they will be of particular benefit to the men engaged in the practice of orthodontia as a specialty, for the use of

the lingual arch is radically different from anything that has been employed as a regulating appliance up to the present time. Neither Lourie nor Mershon claim to have discovered the lingual arch, because if one will go back through the literature of orthodontia he will find the lingual arch has been used as a retaining appliance by a number of men, and certain forms of the lingual arch have even been on the market for a number of years. We may also state that the principal feature of the Jackson appliance consists of a removable lingual arch, and the fact that it does consist of removable spring lingual arch has been the great factor in keeping it before the dental profession for a number of years, even though it has been compelled to receive a large amount of adverse criticism.

Various types of lingual arches have also been used as retaining appliances for a number of years, and have been so described in a number of textbooks. The possibility of stretching a lingual retaining appliance by the use of the wire stretchers was realized by Angle which is proved by the fact that he placed upon the market an instrument for stretching wire by means of pinching, which was designed for increasing the stress upon teeth after the retaining appliances have been adjusted. He also recommended the use of the wire stretchers in pinching a wire placed between deciduous canines for the purpose of expanding the dental arch in the treatment of early cases of malocclusion. This was about the extent of the use of the wire stretching pliers which Angle suggested when used in conjunction with the lingual arch, and during the last few years none of his writings have been devoted to the wire stretching pliers used in conjunction with the lingual arch as an extensive regulating appliance.

The use of the lingual arch as advocated by Lourie is by no means an experiment, for he has been using this method for over twelve years. His first clinic on the use of the lingual arch as a regulating appliance in conjunction with the wire stretchers was before the American Society of Othodontists at the meeting which was held in Chicago in 1905. Since that time he has been increasing the use of the lingual arch in his practice, until at the present time, in his hands the appliance is a positive proposition and one which possesses many advantages. We also learn from Mershon that he has been using a lingual arch for over eight years with very satisfactory results, and at the present time the lingual arch as described in this issue is the principal regulating appliance which he uses. From observation of Mershon's patients, as a result of spending two days in his office, we would make the statement that he uses lingual appliances in at least ninety per cent of the cases, and ninety per cent is a very conservative estimate from what we have seen in his practice. A very pleasing feature in regard to the work done by Lourie and Mershon is the fact that they have used their appliance extensively for a number of years before they rushed into print describing what a wonderful mechanism they had discovered. As a result of years of careful and painstaking effort in using it in their own practice, they have now reached the point where they are able to make positive and definite statements in regard to what the appliance will do, and how it should be used. This is exactly opposite to some of the things we have seen in the last few years in regard to a number of inventors and manufacturers who have designed appliances in laboratories, have rushed into print with large commercialized articles telling the wonderful benefits to be derived from their appliance,

and as a matter of fact, they have never tried the appliance out in practical use, and it has been used experimentally only on a few isolated cases, still the appliances have been published as a complete device before the ink is hardly dry on the patent sheet issued by the patent office. It is therefore a great thing for the science of orthodontia that there are a few men who are working for the advancement of the science to such an extent that they are willing and conscientious enough to try out the results of their experiments, to be satisfied with those results in their own minds, and then give the orthodontic world the result of the years of their efforts and research in the technic with a description of an appliance which is an actuality and not a laboratory experiment. We realize that there has been a great tendency for the American people, as a whole, even dentists and physicians, to rush into print with wonderful discoveries before they have been worked out. We remember several years ago of reading of Sir Richard McEwen, of Glasgow, Scotland, who worked twenty-two years upon the question of bone development before he published the result of his research. We have always appreciated McEwen, and we also appreciate Lourie and Mershon; they have been able and conscientious enough to work a number of years in a quiet unassuming manner upon a regulating appliance which we believe at the present time is far superior to anything that has ever been given to the profession. Therefore in publishing the results of the use of the lingual arch in advocating its use to our readers we can do so without the least bit of hesitancy, for we are positive and certain of what this appliance will do because these men, who have tried this appliance, are men of their word, and we have seen the results of the use of this appliance in a great many cases.

We have stated before that the articles on the use of the lingual arch were intended primarily for men engaged in the practice of orthodontia for we have observed as a result of conversation and traveling and visiting in the offices, that the use of the lingual arch as a regulating appliance is very poorly understood. During the past six months we have visited a large number of offices in all parts of the United States, and find that very few men are familiar with the possibility of the lingual arch, or at least they are not able to accomplish such results as are accomplished by Lourie and Mershon. We find the majority of the best men who have been engaged in the practice of orthodontia a number of years admit the desirability of an appliance which embodies the essential features of the lingual arch. The advantages of this appliance can be very readily seen by those who have been familiar with the use of the labial arch, those who are familiar with such appliances as necessitate the banding of a large number of teeth, the construction of complicated mechanical attachments which make an appliance very conspicuous and render the patient a suitable advertisement for a hardware store, or a walking advertisement for some manufacturer of a regulating appliance. The inconspicuousness of the lingual arch appeals to patients, and as a result of this it is going to force itself upon the orthodontic profession regardless of whether men accept it or try to reject it as something that is useless, because it does not carry a patent and contribute to the royalty of some manufacturing concern.

There is no other appliance, with the exception of Jackson's appliance, which is so little controlled by manufacturing concerns, and no other appliances,

except those mentioned, that place the operator so little in control of the dental supply house, the holder of process patents and appliance patents, as the lingual arch, as has been described in various issues of the *International Journal of Orthodontia*. It is a pleasing fact to know that orthodontia can now rest as a science absolutely beyond the control of manufacturing interests and beyond the control of those who have appliance patents, for the use of the lingual arch rests entirely upon the ability of the operator to use and construct the appliance.

We have already mentioned the desirability of the appliance from an inconspicuous standpoint, and the appliance if properly constructed, is one that exerts force upon the teeth in such a manner as to produce no pain or inconvenience. The teeth can be moved by the use of the lingual arch with absolutely no pain. If any pain is encountered in the use of this appliance it is because of faulty technic and improper construction and wrong application of force. While the appliance possesses great possibilities, there is no appliance with which we are familiar that is capable of producing more harm or undesirable results than if used by one who is not versed in the mechanical principles and familiar with the action of light, small gauge wires acting with a continuous spring force or with a force produced by the wire stretching pliers.

As a result of the observation of cases treated in the practice of Lourie and Mershon we can unhesitatingly recommend the lingual arch to our readers as being an appliance which possesses all the possibilities which they claim for it, and which is capable of doing all the things they claim it will do, and in the manner in which they claim they can be accomplished and one which possesses more ideal requirements, if used by a man who understands its mechanical possibilities, than any other appliance with which we are familiar.

The Liability of Damage Suits in the Practice of Orthodontia

IT is a well known fact that the practice of any branch of medicine, surgery, or dentistry renders the practitioner liable to damage suits in a large number of instances. There is a certain class of lawyers who believe that the medical profession is always at fault, and who, upon the least possible pretense, try to establish damage suits.

Up to the present time those engaged in the practice of orthodontia have been quite free from damage suits, but this has been due to good fortune and not to the fact that the bringing of suits has been impossible. There is no branch of medicine or dentistry that is more liable to damage suits than is orthodontia. It is more liable at the present time than it has been at any time past, owing to the fact that there seems to be a very energetic movement among a certain class of lawyers in different localities to bring damage suits against the medical and dental professions.

At the present time, in a number of cities, damage suits have been filed against dentists for the improper treatment of root canals. This has been brought about, of course, by the present agitation among the medical and dental professions regarding the systemic effects of improperly filled root canals. These

damage suits have also been given impetus because of the different methods advocated for filling root canals. These methods have been severely criticized by the profession's own members, and a great many men have been prone to criticize every method except their own favorite one. Many men in the dental profession have unconsciously and unwisely made remarks in regard to the methods that have been employed by other operators with the result that patients have taken those remarks to a lawyer who has immediately begun a damage suit, which is a very disagreeable and unpleasant proposition to be compelled to defend, even if the suit is unjust and one which probably will be thrown out of court, or decided in favor of the defendant when it comes to trial.

Considering the large number of suits that are being filed against the dental profession at the present time, it is only wise that we should remember the possibility of suits being filed against practitioners of orthodontia. As we have said before, there is no branch of dentistry in which suits can be more easily filed than in the practice of orthodontia. There are so many conditions which may arise during the process of orthodontic treatment which can not be foretold in the beginning, that if the case should fall into the hands of a disreputable lawyer, or at least a lawyer who is prone to file damage suits, a great amount of trouble could be caused a large number of practitioners of orthodontia. To illustrate a few of the conditions which may be made bases for damage suits we need only to call attention to the fact that in the mouths of some patients there is a great tendency for the gingival tissue to become inflamed during the process of treatment. Every orthodontist has seen mouths in which a slight irritation from the appliance will cause the gingival tissue to become inflamed and hypertrophied. In a great many instances this inflammation and hypertrophy may have existed before the treatment of the malocclusion was begun. However, if the parent is not advised of this condition, after the case has been under treatment for some time, some dentist sees the patient and calls the parent's attention to the inflamed gingival gum tissue; he may suggest the possibility of a damage suit, or he may suggest that the treatment is being improperly conducted, which results in the parent seeking the advice of a lawyer. Or some lawyer gets the information that some dentist is criticizing the orthodontist's work, and the result is a damage suit is filed. This hypertrophied gingival tissue may have existed before the treatment was begun; and if it has been caused by the appliance, it is nothing which is serious and can not be easily eliminated; and it is certainly no basis for a damage suit. Another phase of this subject is the fact that in some of these cases of hypertrophied gum tissue the patient may fall into the hands of some dentist who tells the patient he has a malignant tumor, and very cunningly removes the tissue; a damage suit is filed as a result. The hypertrophied gum tissue having been removed, there is no evidence to prove that a malignant tumor did not exist, and testimony to the contrary will probably receive very little weight in court, for it is a well known fact that the majority of juries look upon expert testimony as very unreliable. Expert testimony and evidence will prove that children of an orthodontic age are not prone to have malignant tumors, nevertheless, it is very easy for a lawyer to so describe a condition that he can convince a jury that the child did have a malignant tumor, and that the tumor was caused by the regulating appliance.

Another condition which will arise is the decay of the permanent teeth. During the past few years a great amount of attention has been given, and many articles have been written, in regard to the possibility of orthodontic appliances causing decay of the teeth. While there is probably no question but that teeth will decay during orthodontic treatment, it is also a well known fact that the teeth of children who never have had regulating appliances in their mouths are prone to decay. Therefore at the beginning of the treatment of a case of malocclusion, the teeth should be carefully examined for caries; a chart should be made showing what teeth are decayed and filled at the time the treatment is begun. The teeth should receive a careful prophylactic treatment and examination, and if there are any white spots on the surfaces of the teeth, they should be carefully noted and the parent's attention directed to them, to avoid the possibility of spots which existed before treatment being attributed to the treatment after it is begun. The use of bands and ligatures upon teeth offer a very satisfactory excuse for their decay. If a tooth has had a band on, or if a tooth is in contact with a band, and caries occurs in either one of these teeth, it is very hard to make the parent and some dentists believe the decay is the result of normal conditions and has not been caused by the band; likewise if ligatures are used upon teeth and the proximal surface of teeth decays, it is easy for some men to believe or state that the ligature has caused the decay of the tooth, when, as a matter of fact, the largest amount of caries found in teeth appears on the proximal surface although they may never have had ligatures upon them. We have seen the decay of teeth that have had regulating appliances on them, but this does not prove that the appliance has been the direct cause of the decay; however some record must be kept of the number of decayed teeth at the beginning of treatment as a means of protection.

The number of teeth that are devitalized at the beginning of treatment should also be recorded, for the possibility of trouble from a devitalized tooth must be borne in mind. If a devitalized tooth should give trouble during orthodontic treatment, the trouble would be laid to the treatment, while in fact most devitalized teeth give trouble without any orthodontic treatment being instituted.

Probably in times past a number of teeth have been devitalized during orthodontic treatment, but the cases where it actually has occurred have been very few. Up to the present time we do not know of any damage suits having been filed against orthodontists for the devitalization of teeth, nevertheless it is a condition which would cause a great amount of trouble if it fell into the hands of an unscrupulous lawyer.

It must also be remembered that a certain number of pulps die in teeth without any cause so far as is known; also that pulps die in teeth as the result of blows, and experience has also taught us that patients with regulating appliances are not immune to blows upon the teeth. In a great many instances patients come back with stories of the regulating appliances having been knocked out of their mouths, lost in play, and even some go so far as to have them kicked out. Therefore, if the teeth are subjected to all of those external violences during the wearing of regulating appliances, it is not unreasonable to believe if the pulp dies, that the external violence may have had as much to do with it, or more than the orthodontic treatment.

Another condition which has been called to our attention is the fact that the roots of some teeth are shorter than normal; that the roots of some teeth fail to develop or seem to be absorbed sometime during the life of the individual. Whether orthodontic treatment has ever caused destruction of a root of a tooth we do not know, but radiographs have been shown, taken of teeth during orthodontic treatment, in which the roots of certain teeth were imperfectly developed. It is, therefore, wise in the beginning of all orthodontic treatment to have radiographs made of all the teeth in order to show the condition of the roots at the time the treatment was begun and to be able to prove that certain conditions have not occurred which might be attributed to the treatment if radiographs of conditions before treatment was instituted can not be shown as evidence.

Another though lesser factor which may enter into suits, either damage suits or civil suits, is the fact that a great many orthodontists in times past have been prone to definitely promise their patients a great many things which they only hoped would occur. Some men have gone so far as to promise that the correction of the malocclusion would improve the patient's breathing, or in other words would change a mouth breather into a normal breather. While clinical evidence shows that orthodontic treatment, in the majority of cases, will improve the breathing, and in some cases, will change the mouth breathers to normal breathers, nevertheless it is not a wise thing to make a positive statement to a parent that such a thing will occur. Clinical evidence also shows that orthodontic treatment improves the general health of the individual, and as a result of this we believe that a child who is underfed, undernourished, and poorly developed will have his general health improved as the result of orthodontic treatment. But such a result should not be guaranteed, it should not be promised positively, but should only be stated as a belief. Again, some men have always promised a result which will be "normal occlusion" or "perfect occlusion." In the majority of cases we again say that a normal occlusion, or what is called a perfect occlusion, can be obtained; but we also know that there are a certain number of cases, which, because of malformed teeth, the irregularity in the size of the teeth, and other conditions which might be mentioned, render the establishment of normal occlusion impossible. Because of these things we caution orthodontists against making positive promises, and suggest that they only outline, in a general way, the benefits to be expected, stating that if the case responds as other cases have, certain benefits may be expected.

Again, we find that remarks of orthodontists in criticizing the work of someone else may very often be the cause of a damage suit. We have known men who have begun a certain line of treatment for the correction of a malocclusion; the patient, traveling to some other part of the country, has fallen into the hands of another orthodontist, and the second orthodontist has very severely criticized the treatment as outlined by the first man. In the first place, severely criticizing another man's work is a very unethical thing to do because the probabilities are that the man who first began the treatment was more familiar with conditions, more familiar with the environment of the patient than the man who saw the patient after the appliances were on the teeth. Not only is it unethical to criticize the work of a fellow orthodontist in such a manner, but it is very indiscreet to do so, for these remarks may be made the basis of a damage suit.

We have even heard some orthodontists go so far as to tell the patient that any man who follows that kind of treatment should be placed in jail, or should not be allowed to practice orthodontia. While in the majority of cases the patients are broadminded enough not to consider these remarks, however, there are certain patients who would if they had the proper legal advice, immediately file damage suits against the first man, based upon the remarks of the second. As a matter of fact, the man who began the case is probably more capable than the man who criticized.

Criticizing a certain appliance as seen in the mouths of patients is also very unprofessional and unethical, and also may lead to damage suits for which the orthodontist is responsible. There is a responsibility which one orthodontist has to another from an ethical standpoint, also a responsibility which one man has to another, which might be termed a "safety-first" move. In other words, an orthodontist who unwisely criticizes the plan or the treatment of another orthodontist may simply be starting a damage suit, which may cause the same thing to happen to him in return. This is what may be brought about by unwise statements given carelessly by some orthodontist. The responsibility of one orthodontist to another, so far as damage suits are concerned, can be avoided if men will simply be ethical, show the professional spirit which they should show, and not criticize each other.

In calling attention to the liability of damage suits which may be filed against orthodontists, it is only fair that we should state that every man engaged in the practice of orthodontia should take every possible step to protect himself against these conditions, because one can never tell when a suit will be filed. As a preparedness measure, orthodontists should take out liability insurance with some reliable concern, because nothing discourages the filing of damage suits by shyster lawyers so much as to know they will be compelled to fight an insurance company that has an array of legal talent always ready to meet such emergencies. In the spirit of today, first be careful, and second be prepared.

A Mess of Pottage

WE remember a certain distinguished individual in ancient history who was supposed to have traded his birthright for a mess of pottage. Because of a certain condition existing in the dental profession today we are led to stop and ask the question whether the dental profession is not selling its birthright, in a great many instances, for a mess of pottage.

We have upon our desk today three different lots of advertising literature which have been sent to us by different concerns. If we should follow out the suggestions made in those advertisements, we would be like the gentleman of old in trading our birthright for a mess of pottage. We are referring particularly at the present time to the large amount of free literature of an advertising nature which is sent the dental profession advocating the wonderful virtues and properties of certain tooth pastes, mouth washes, and similar dentifrices. When we first graduated from dental college we supposed it was a compliment to have a manufacturing concern offer to send us free samples, for we believed

they were recognizing our scientific ability in asking us to recommend their preparations to our patients, and we were flattered to believe that they thought we were scientific enough that our opinion would have some weight with the public, and some weight with them in manufacturing those articles. As we grew older and wiser in the ways of the world, we observed it was not a question of flattery, but the sending of this literature to us offering to send us free samples was nothing more than a question of a bribe, a legitimate form of graft, and an insult to our intelligence. In each one of these circular letters, which came with a two cent stamp on it, we are informed that the tooth paste or mouth wash possesses all the necessary requirements that any such article should possess. We are even given a line of "talk" which we should give our patients recommending this particular article, and we are informed that the same has antiseptic properties which will heal diseased gums, tighten loose teeth, and do a large number of other things which might be supposed to be desirable in a large number of cases.

While some of these mouth washes and tooth pastes may possess antiseptic properties, the question may arise as to whether an antiseptic mouth wash or a tooth paste is desired by all people. In other words, does every mouth desire an antiseptic tooth paste; does every mouth desire a mouth wash which is supposed to tighten the teeth and make the gums hard? Suppose there is no need for an antiseptic mouth wash or preparation which will harden the gums. Then what is going to be the effect of the continued use of such a preparation? We are also informed that a number of these tooth pastes possess no grit, are very delightful and pleasing to the taste. The latter part of this seems to be the greatest argument in favor of tooth paste, because we find the majority of individuals select a mouth wash or a tooth paste which is agreeable to the taste. If they possess that feature, this is the only thing that the general public thinks is necessary in dentifrices.

In regard to the dental profession trading its birthright for a mess of pottage, we have learned in conversation with a number of dentists that they always recommend a tooth paste and mouth wash which some energetic company succeeds in keeping them supplied with. In other words, the patient asks the dentist about a tooth paste and he always recommends the tooth paste of which he happens to have a number of samples. When they run out of samples they simply fill out an enclosed post card, send to the manufacturer, and the manufacturer is commercial and wise enough to keep the dentist supplied with a quantity of his tooth paste, thereby getting the dentist to act as a free advertising bureau for his article which may possess some virtue and which may not. As a further insult to the intelligence of the dental profession, the majority of these manufacturers of dental preparations enclose blank prescription forms by which it is only necessary for the dentist to sign his name, send the patient to the drug store with this aforesaid standardized prescription blank to obtain the article which the manufacturer wishes the dentist to recommend to his patient. It is an insult to the intelligence of the dental profession by assuming that they have not enough intelligence to write a prescription for a mouth wash if the patient should want one. It is a further insult to the dental profession to assume that they do not know enough about pathological conditions to recommend a mouth

wash which is suitable for the particular individual case. It is further an insult to the intelligence of the dental profession to try to make them believe that any one particular mouth wash or tooth paste will be suitable to all mouths, and to all pathological conditions which are present in all individuals. It is equally a bad plan to suggest that any one particular mouth wash, which is suitable for pathological conditions, would be a desirable thing to use in the mouth of individuals that are in a healthy condition. In other words, it would be a bad thing to use a tooth paste or mouth wash which is suitable for a pathological condition of the gums in a mouth which simply requires a cleansing agent for cleaning the teeth, or in cleaning the teeth and the gum. It would be wrong to use an antiseptic and astringent mouth wash when simply a cleansing agent is required.

We are not saying that all tooth pastes and all mouth washes are useless; we are not claiming that they do not have particular virtues, but we do claim that the dental profession has enough intelligence to select the particular tooth paste or mouth wash indicated, and dentists should be allowed to recommend those dentifrices upon their own knowledge of the articles, and not because some energetic advertising manager of a manufacturing concern insists upon keeping them supplied with articles, and also insists upon keeping them supplied with prescription blanks, and an intelligent (?) line of conversation which they are supposed to give to their patients. We, therefore, believe it is time for the dental profession to pause and realize it has, in a great many instances, been made a tool for the furthering of some manufacturing interest, and as a result of that it has traded its birthright for a mess of pottage—or a lot of tooth paste.

The Pacific Coast Society of Orthodontists

THE Pacific Coast Society of Orthodontists, the only organization on the Pacific Coast devoted to the advancement of the science and art of orthodontia, held its annual meeting in San Francisco February 12 and 13, 1917. This was the fourth annual meeting since its organization, and a review of the work which the society has so far accomplished, constitutes the warranted justification for its existence as a factor in the further progress of orthodontia, as a specialty and in its bearing upon health problems.

To the pioneers in the field of orthodontia and to all those who during the past twenty-five years have preached the gospel of normal occlusion, the entire dental profession is, indeed, deeply indebted. The problems in that field which, so far, have been successfully unraveled have affected the trend of dental practice to an amazing extent. Orthodontia in its advancement has furthered the interests of operative and prosthetic dentistry almost as much as its own. Normal occlusion is the basis of rational orthodontia and similarly the unnegligible factor in conservative and restorative procedures. As a *sine qua non* in the permanency of dental restorations, the orthodontists' conception of normal intercuspal and mesio-distal relationships has been permanently affirmed.

Orthodontia has broadened out in the last two decades to such an extent as to embrace within its scope, in addition to the dynamics of tooth-movement

and anchorage, problems of general interest in the field of health conservation. It has a place among the sub-specialties of medicine commensurate with the character of the services it renders in its own and allied territories.

Orthodontia is a prophylactic power in its bearing upon the prevention and correction of abnormalities of the mouth and nose cavities and of the structures in relation thereto for if permitted to persist these abnormalities become in time the causative factors of disorders of the respiratory, digestive and nervous systems. It is not limited in its scope to the correction of dental and oral deformities for the purpose of beautifying the human face, commendable as that function may be. Its viewpoint is broader, encompassing a consideration of those forms of physical inefficiency traceable directly to oral deformities permitted to go untreated because of the laity's ignorance and to some extent the dental and medical professions' indifference. The chain of systemic developmental defects and pathologic states, directly traceable to post-nasal obstruction associated with mouth-breathing, offer a most eloquent and convincing proof that orthodontia embraces in its ministrations something more than the means of correcting visible dental and facial deformities. Children, the sufferers from these abnormalities, are mentally and physically below standard. They are not infrequently the victims of nervous disorders which stamp them as the idiots they need not permanently be and become the sufferers, because of neglected treatment along orthodontic lines, of such deep-seated and chronic infections as pulmonary tuberculosis. Again malpositions of the teeth are the cause of disturbances of digestion and assimilation and, furthermore, because of the part which they play as predisposing causes of dental caries and of destructive inflammations of the investing tissues, are, in no uncertain degree, at the bottom of the systemic manifestations which follow in the wake of these common dental diseases. From the restorative standpoint these conditions hold equally true, even though the profession at large does not as yet fully appreciate the pathological significance of operations carried out in partial or complete disregard of the principles of normal occlusion. A filling which does not restore mesio-distal and intercusp relations is a menace to the life of its investing tissues, of those of its neighbors and perhaps of the entire complement of teeth, upper and lower. Empirical dentistry is the only kind of dentistry which disregards normal occlusion and in these days of intensified clinical and laboratory facilities, empiricism must be measured in terms of either ignorance, criminal negligence, or both.—*The Pacific Dental Gazette*.

American Institute of Dental Teachers

AT the last annual meeting of the American Institute of Dental Teachers, held at Philadelphia, Pa., January 23 to 25, 1917, the following officers were elected: President, Dr. John F. Biddle, 517 Arch Street, Pittsburgh, Pa.; Vice-President, Dr. A. W. Thornton, McGill University, Montreal, Que.; Secretary-Treasurer, Dr. Abram Hoffman, 529 Franklin Street, Buffalo, N. Y.; Executive Board, Dr. R. W. Bunting, Ann Arbor, Mich., Dr. A. D. Black, Chicago, Ill., and Dr. G. S. Millberry, San Francisco, Cal. The next annual meeting will be held January 29, 30 and 31, 1918. The place of meeting will be announced later.

Dr. James Grant Lane

AS a frontispiece to this month's Journal we publish the photograph of the late Dr. James Grant Lane, of Philadelphia. In the death of Dr. Lane orthodontia unfortunately loses one of its most enthusiastic and capable workers.

Dr. Lane died from the effects of inhalation of gasoline fumes, near his home, 1727 Memorial Avenue, Philadelphia, on February 4, 1917. The night being cold, he had gone to his private garage, a short distance away, to take precautions against the freezing of the water in the radiator of his automobile. Some hours later Mrs. Lane awoke, to find her husband not returned. She went to the garage, found it locked, but through a mailing orifice in the door could see the body of her husband lying under the car. Officers who assisted her in gaining entrance had the body taken to the Presbyterian Hospital, where it was stated he had been dead for some time. From the position in which the body was found it is believed that Dr. Lane had attempted to make some slight repairs to the car's mechanism, and, lying close to the floor, the deadly gas thus rendered him unconscious; death following apparently without a struggle. The coroner's jury rendered a verdict of accidental death from petromortis.

Dr. Lane was born April 12, 1866, on a farm near Shirleysburg, Huntingdon County, Pa. His parents were the Rev. James R. Lane, a Dunkard bishop, and Catherine (Meyers) Lane. Dr. Lane received his early education in the public schools of his vicinity, after which he went to Juniata College, at Huntingdon. Following this for a time he worked in the office of Dr. Thomas Rhodes, of Cora, Pa., where he entered the dental department of the University of Pennsylvania, graduating therefrom in 1890. He was made a demonstrator of crown and bridge work in the same institution beginning with the session of 1892-93, and for over twenty-five years held various teaching positions with his Alma Mater, his final promotion there being to that of assistant professor of orthodontia. At the time of his death he was clinical professor of orthodontia at Hahnemann Medical College, having received that appointment during the session of 1915-16.

Upon graduation Dr. Lane opened an office on Powelton Avenue, near Thirty-eighth Street, Philadelphia. Later he practiced and had his residence at 829 North Fortieth Street. Several years ago he opened offices in the Perry Building, Philadelphia, where he practiced up to the time of his death.

Dr. Lane was what everyone who had ever known him or heard of him liked to call a "mechanical genius." His workshop, with its various lathes, machinery and tools, was a source of wonder and admiration to all who visited him. When a case needed an appliance extraordinary, he manufactured it; if special tools or instruments were needed, they also were devised. All of which gave him a manipulative skill and a creative ability that likely has not been surpassed by his peers. Many appliances and instruments found in the dental depots bear his name, while he also contributed several valuable inventions to articles in general use. It was this love for creating the unusual that led him, doubtless, to take up the science of orthodontia as a specialty, and which during the latter years of his practice he had brought to a remarkably successful standpoint.

As a society program attraction Dr. Lane was much sought after, for, as his hearers often would say, "Lane always tells us something." His pen, too, was

a facile one, as his many contributions to the literature of his profession will attest. Probably it was as an extemporaneous discussor of papers, however, that he appeared to greatest advantage at dental meetings. He seemed to have the desirable faculty of viewing a subject from every possible angle, and, while generous, was also fearless; he seemed, too, to forget nothing in the way of detail. If he failed to debate upon a particular phase of the subject, it was because he knew nothing about it, and usually said so. His popularity led, in 1908, to an invitation by various dental societies along the Western coast to pay them a visit, and members of those societies yet delight to tell of the enthusiasm with which he was received at hurriedly arranged meetings ranging from Los Angeles to Seattle.

When the Pennsylvania State Dental Society was reorganized several years ago on what has come to be known as the "Illinois plan," Dr. Lane was made Chairman of the Committee on Reorganization, and the present strength and success of that society are largely due to his unselfish and untiring efforts to bring into its fold every component dental society in the State.

Dr. Lane was a member of the National Dental Association, Pennsylvania State Dental Society (past president), Pennsylvania Association of Dental Surgeons (past president), Academy of Stomatology, Odontographic Society of West Philadelphia (past president), Dental Alumni Association of the University of Pennsylvania (past president), Eastern Association of Graduates of the Angle School of Orthodontia, and Philadelphia Alumni Chapter of Psi Omega (P. G. M.). A great many other societies had elected him to honorary membership. He was a Past Master of Philadelphia Lodge, No. 72, F. and A. M., which body conducted services at the grave.

Because of his genial disposition James G. Lane numbered among his friends all those whom he had met during a busy lifetime of teaching, practicing and society work. As a consequence his death came as a great shock and sorrow to a host of friends the country over. Those who were fortunate enough to be intimately and frequently associated with him suffer a loss that will always be keenly felt, for he occupied a place in their hearts that can never be filled by another.

Dr. Lane is survived by a widow, Mary Ellen (Bartholomew) Lane, formerly of Chester Valley, whom he married April 8, 1896, and by three daughters—Mary Bartholomew and Caroline Huddleson, aged 19, and Helen, aged 16.

Seventh Annual Meeting of Dewey School of Orthodontia

THE Seventh Annual Meeting of the Dewey School of Orthodontia was held at Hotel LaSalle in Chicago, March 13, 14, 15 and 16, 1917.

It was decided to hold the Eight Annual Meeting in Chicago in the month of April, 1918, the exact dates being left to the discretion of the executive meeting.

The following officers were elected for the ensuing year: President, J. W. Parsons, Huntington, W. Va.; Vice-President, T. E. Purcell, Kansas City, Mo.;

Secretary-Treasurer, D. S. Sterrett, Erie, Pa. The Executive Committee is composed of the following: Max Ernst, St. Paul, Minn.; Alexander Jones, Youngstown, Ohio; A. M. McCarty, Tulsa, Okla.

The official program of the meeting follows:

TUESDAY, MARCH 13th.

- 10:00 A. M.—President's Address, Dr. A. C. Gifford, Oshkosh, Wis.
- 11:00 A. M.—Reports and Election of Officers.
- 2:00 P. M.—Origin and Function of Peridental Membrane, Dr. Dewey.
- 3:30 P. M.—Change in Dental Laws to Provide for Registration of Orthodontists, Dr. T. E. Purcell, President Missouri State Board of Dental Examiners.
- 4:30 P. M.—Interpretation of Radiographs, Dr. L. E. Carter, San Diego, Cal.

WEDNESDAY, MARCH 14th.

- 9:30 A. M.—Orthodontic Appreciation, Dr. Oscar Busby, Marshall, Texas.
- 10:00 A. M.—The Deciduous Molars and Their Relation to the Development of the Jaws, Dr. Charles R. Baker.
- 11:00 A. M.—Why the General Dentist Should Not Practice Orthodontia, Dr. E. G. Weeks, Saginaw, Mich.
- 2:00 P. M.—New Pathology, Dr. M. N. Federspiel, Milwaukee, Wis.
- 3:00 P. M.—Paper and Clinic on Swaged Molar Bands, Dr. Dewey.
- 4:00 P. M.—Practical Application of Engineering Methods in Orthodontia, Mr. Gilbert D. Fish, Columbia University, New York.

THURSDAY, MARCH 15th.

- 9:00 A. M.—The Question of a Universal Appliance, Dr. Harry P. Beaser, Fresno, Cal.
- 10:00 A. M.—Prophylaxis and Its Relation to Orthodontia, Dr. H. C. Hartwig.
- 11:00 A. M.—Technic and Use of Plain Bands and Lingual Arch, Dr. J. V. Mershon, Philadelphia, Penn.
- 2:00 P. M.—Radiography and Its Relation to Orthodontia, Dr. W. A. Griffin, Vice-President of National Dental Association.
- 3:00 P. M.—Principles Involved in Applying Orthodontic Pressure, Dr. Varney E. Barnes, Cleveland, Ohio.
- 4:30 P. M.—Subject not announced, Dr. L. L. Barber, President of National Dental Association.

FRIDAY, MARCH 16th.

Clinics—Drs. Lourie, Dewey, Mershon, Barnes, Sterrett, Richardson, Johnson.

The Independent Dental Journal

THE article written by Professor Gies on "Independent Journalism Versus Trade Journalism in Dentistry," and published in the December, 1916, issue of the *Journal of the Allied Dental Societies* deserves to be widely read by dentists. Its appearance is most timely, and indicates that a new order of things is dawning in dentistry. Ten years ago there would have been no inspiration for the writing of such an article, and surely no medium in which it could have been published. Its appearance denotes the birth of new thought in dentistry, and indicates that in time dentistry, like the other learned professions, will have mediums that are not controlled by firms whose business it is to make profit out of the commercial side of dentistry.

Undoubtedly Patrick Henry's fiery speech on independence had much to do with the American colonies breaking away from England and establishing their independence. Let us hope that Professor Gies will be the Patrick Henry to American dentistry in its struggle to break away from trade journalism. When

one analyzes this situation and compares it with existing conditions in other professions, one is appalled and then amused that a great science like dentistry should have remained quiescent so long with reference to this condition. How long would the science of architecture stand for its journals being dominated and controlled by a firm or group of firms that engage in the manufacture of carpenter's or plumber's tools? How long would scientific chemistry stand for its journals being owned and controlled by the manufacturers of crude drugs, pharmaceuticals, or laboratory supplies? How long or how far would medicine progress if all the medical journals were owned and published by instrument and drug manufacturers? Your answers to these questions are an easy matter. In not one instance would either of the above sciences tolerate the dominance of their journals by trade influences. Then why should the dental profession stand for it?

Its pernicious influence is obvious at a glance. Like an autocratic form of government, it may be beneficial, and then again it may be harmful. Why give trade power over science? Science always rules trade. Why try to do the absolutely impossible by making a great science subservient to the whims of trade and commerce? Does the trade dental journal flourish because its subscription price is one dollar, or even sent gratis? If so, then the shame of the whole situation rests with the dentist. But experience proves that this is not the case. The dentists are as willing to pay for dental literature and pay what it is worth as any other profession. Dental books are priced just as high as medical books, and there is no objection on the part of the dentist to paying the publisher's price. When the *International Journal of Orthodontia* was started and its price put at three dollars, just three times that of any other dental journal in America at the time it was started, dire calamities were predicted for it because it was said the dentist would not pay more than one dollar for a journal. But the *International Journal of Orthodontia* has grown in subscriptions every month, and it has grown because it has rendered a service to its readers and charged a price that was in keeping with the services rendered. It is impossible to publish a journal similar to dental journals published in this country today and sell it for one dollar unless profit is made in other channels. A journal published at this price will not return the publisher in gross subscription income five cents a copy, and that will hardly pay for the paper. But when a dental manufacturer can carry from thirty to forty pages of his own advertising at composition and paper cost, that otherwise would cost from \$1500 to \$2000 a month, besides making profit on his outside advertising, he is willing to lose on his subscription department. But who pays for it in the end? It is not necessary to answer this question, its solution is too easy. The danger in trade dominated dental journals is the opportunity given a manufacturer to play horse with the members of the dental profession when this manufacturer has something to sell. His advantage is evident at a glance.

It is a demonstrated fact that a "little leaven leaveneth the whole." The article of Professor Gies points the way to a new order of things. It may be long in coming, but its coming is assured.